

T.C.
YEDITEPE UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
DEPARTMENT OF NUTRITION AND DIETETICS



**EVALUATION OF LABEL READING HABITS
ACCORDING TO GENDER**

MASTER'S THESIS

SIBEL SOYLAR

ISTANBUL, 2019

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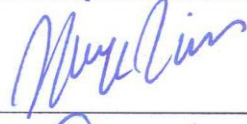


SUPERVISOR
ASSIST. PROF. DR ISKENDER KARALTI

ISTANBUL, 2019

TEZ ONAYI FORMU

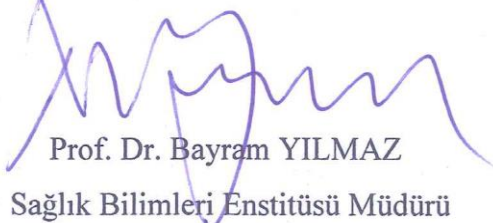
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	Unvanı, Adı-Soyadı (Kurumu)	İmza
Jüri Başkanı:	Dr. Öğr. Üyesi Huriye TÜMER (İstanbul Sabahattin Zaim Üniversitesi)	
Tez danışmanı:	Dr. Öğr. Üyesi İskender KARALTI (Yeditepe Üniversitesi)	
Üye:	Dr. Öğr. Üyesi İrem KAYAOĞLU Yeditepe Üni.	
Üye:		
Üye:		

ONAY

Bu tez Yeditepe Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca yukarıdaki jüri tarafından uygun görülmüş ve Enstitü Yönetim Kurulu'nun 06/09/2019 tarih ve 2019/14-12 sayılı kararı ile onaylanmıştır.


Prof. Dr. Bayram YILMAZ
Sağlık Bilimleri Enstitüsü Müdürü

DECLARATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Sibel SOYLAR



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I would like to thank my supervisor, Assist. Prof. İskender KARALTI, who advised me during my dissertation and who supported me in every circumstance, also I would like to thank my husband and family who supported me with love and gave strength during my dissertation.

Sibel SOYLAR

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LIST OF SYMBOLS AND ABBREVIATIONS

EU	European Union
BMI	Boby Mass Index
GMO	Genetically Modified Organism
NBS	Starch Based Sugar
SPSS	Statistical Program for Social Sciences
TSE	Turkish Standarts Institue
WHO	World Health Organization
PSA	Public Service Announcement
TGK	Turkish Food Codex
FDA	Federal Drug Administration
TUIK	Turkish Statistics Agency

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ABSTRACT

Soylar, S. (2019). Evaluation of Label Reading Habits According to Gender. Yeditepe University, Institute of Health Science, Department of Nutrition and Dietetics. MSc Thesis, İstanbul.

The information on the label of the product, unit price, production and recommended consumption date, nutritional values on the food packaging labels is very important for consumers to make healthier choices. Labels and the information on these labels are of great benefit in consciously consuming foods, facilitating the decision-making process and helps consumers with making the right choices at the purchasing stage.

This study is a cross-sectional study conducted between April - May 2019. In this study volunteer participants over 18 years of age living in Izmir were included and their label reading habits and healthy lifestyle behaviors were evaluated according to gender by a developed questionnaire. Marital status, age, education and monthly income level, employment status and average monthly income were questioned. 132 volunteers were included in the study, 66 of the participants were female.

We did not observe any difference between label reading habits and gender. There was statistically significant relationship between gender and education level of participants and men consumed more fast food than women.

In this study, it was observed that individuals mostly pay attention to the production and last consumption date of the product. Majority of the participants that have the habit of reading food labels, make the healthier lifestyle related choices such as nutrition and exercising. In this study we aimed to investigate the relationship between label reading habit and gender.

Keywords: Label Reading, Healthy Nutrition, Lifestyle, Food Labels

ÖZET

Soylar, S. (2019). Cinsiyete Göre Etiket Okuma Alışkanlığının Değerlendirilmesi. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik ABD., Master Tezi, İstanbul.

Tüketicilerin daha sağlıklı seçimler yapabilmeleri için ürün etiketi, birim fiyat, üretim ve önerilen tüketim tarihi, gıda ambalaj etiketlerindeki besin değerleri ile ilgili bilgiler çok önemlidir. Etiketler ve bu etiketler üzerindeki bilgiler daha bilinçli beslenmek, karar alma sürecini kolaylaştırmak ve tüketicilerin satın alma aşamasında doğru seçimleri yapmalarına katkıda bulunur.

Bu çalışma, Nisan - Mayıs 2019 tarihleri arasında yapılan kesitsel bir çalışmadır. Bu çalışmaya İzmir'de yaşayan 18 yaşından büyük gönüllü, katılımcılar dahil edildi ve etiket okuma alışkanlıkları ve sağlıklı yaşam tarzı davranışları, araştırmacılar tarafından gelişmiş bir anket ile cinsiyete göre değerlendirildi. Medeni durum, yaş, eğitim ve aylık gelir seviyesi, istihdam durumu ve aylık ortalama gelir sorgulandı. Çalışmaya 132 gönüllü dahil edildi, katılımcıların 66'sı kadındı.

Etiket okuma alışkanlıkları ve cinsiyet arasında anlamlı bir fark gözlemlenmedi. Katılımcıların cinsiyetleri ve eğitim düzeyleri arasında istatistiksel olarak anlamlı bir ilişki görüldü. Erkeklerin kadınlara göre daha fazla "fast food" tükettikleri görüldü.

Bu çalışmada bireylerin çoğunlukla üretime ve ürünün son tüketim tarihine dikkat ettikleri görülmüştür. Yiyecek etiketi okuma alışkanlığına sahip katılımcıların, beslenme ve egzersiz gibi daha sağlıklı yaşam tarzıyla ilgili seçimler yaptıkları görüldü. Bu çalışmada etiket okuma alışkanlığı ile cinsiyet arasındaki ilişkiyi araştırmayı amaçladık.

Anahtar Kelimeler: Etiket Okuma, Sağlıklı Beslenme, Yaşam Biçimi, Gıda Etiketi

1. INTRODUCTION

The information on the label of the product, unit price, production and recommended consumption date, nutritional values on the food packaging labels is very important for consumers to make healthier choices. Labels and the information on these labels are of great benefit in consciously consuming foods, facilitating the decision-making process and helps consumers with making the right choices at the purchasing stage. Therefore, although it is unique to many countries, it is obligatory to provide necessary information on the food labels (1).

A well-implemented food labeling system has been shown to reduce the prevalence of obesity and the associated obesity by encouraging healthier choices for the purchase of foods (2). In a study of 250 adults aged 18-49 years in Australia, menus for fast-food food exchangers were presented to participants with energy content only and were asked to choose from the menus. It was seen that the choices made from the menu presented with energy contents and nutritional values were healthier (3-4). In a study conducted with individuals older than 55 years in the United States, it was found that reading labels on the front of the packaging (Front-Of-Package, FOP) increased healthy preferences (3). In a study conducted in Izmir, 542 individuals engaged in food shopping were evaluated for their attitudes towards firm and market brands. As a result of the research, it was determined that the most important features that consumers pay attention to when choosing a brand are the information in price, brand and label.

Packaging is a means of communication that connects the manufacturer and the consumer. Packaging helps the consumer to make decisions during the purchase by providing a lot of information about the product such as price, quality, quantity, brand (5).

Conscious consumer plays an important role in ensuring that businesses make healthier, more reliable and hygienic foods available to consumers through their choices (6). In a study conducted in Tokat in Turkey, perceptions about food safety of individuals, socio-demographic characteristics, economic structure, brand assessment, factors affecting label reading is evaluated in terms of perceptions about food safety. It is determined that consumers prefer packaged and branded products and buy higher priced brands as the level of education increases. It was seen that the majority of the

individuals who participated in the study heard the concept of food safety and could accurately describe it. The effect of gender, age group and education level variables on the results was higher than the other variables. It has been determined that consumers who make purchasing activities without considering food quality and reliability have various health problems. In order to prevent all these negativities, consumer awareness about label, packaging, brand, quality and reliability issues should be established (7).

The Food and Drug Administration (FDA) has established a comprehensive law that contains food, fat, saturated fats, cholesterol, calories, carbohydrates, proteins, vitamins and portioning information (10-11). First held in 2011 in Turkey, the Turkish Food Codex Labeling Regulation No. 28157 has finally receive the final version of the amendment in the Official Gazette No. 28906, published in 2014 (11-12). Mandatory labeling information must be available in food and easily accessible in accordance with the provisions of the regulation. These regulations, on the one hand, are important for marketers to define the product and on the other hand, they give the right information about the product and make it necessary and necessary for the consumers to consume the quality products and protect their health rights.

Americans typically take a lot of salt, saturated fat and sugar in their diet compared to other countries. It has been shown that controlling food labels, knowing what people eat and how much, play a central role in healthier eating. (8). In this study, we aimed to investigate the effect of label reading on healthy eating.

2. LITERATURE REVIEW

2.1. Food Labels

Food labels are one of the most important parts of food safety as they provide consumers with accurate information about products and make more informed choices (9). The main objectives of labeling are to provide reliable and adequate information on health and safety as well as economic concerns, to protect consumers from fraudulent and misleading referrals and to ensure fair competition (10).

In the Turkish Food Codex (TGK), all kinds of inscriptions, special information, trademarks, brand names, special nomenclature, pictorial elements or signs used in foodstuffs, excluding food labeling, indir price reduction and promotional information, are used. promotional information that contains or is present in the packaging of the food or presented with food such as documents, notices, labels, etc. (11). An example of a food label is given in Figure 2.1. Mandatory information on food labels are (12):

- The name of the food,
- Contents,
- Net amount,
- Name of manufacturer and packer company,
- Registered trademark,
- Address and place of production,
- Expiry date,
- Batch number and / or serial number,
- Date and number of production permits,
- Date and number of registration number or import control certificate,
- Country of origin,
- Consuming suggestions and / or storage conditions, if necessary,
- Alcohol content in beverages containing more than 1.2% alcohol by volume.



Figure 2.1. Example of food label. Source:

<http://www.etiketcenter.com.tr/images/urun/048.jpg> (Access Date: 22.04.2019)

2.2. Habits of Food Label Reading of Consumers

Nowadays, consumers want to have more detailed information about the food products they will buy, and in response to the request, manufacturers provide more information on the labels. The maximum information on these labels is more audited than in the past (1).

The increasing prevalence of obesity in the United States caused increased focused on the effectiveness of food labeling rules in improving health outcomes. The increasing prevalence of obesity in the United States has focused on the effectiveness of food labeling rules in improving health outcomes. The American Food and Drug Supervisory Board Obesity Working Group reports that the increase in obesity has accelerated in the last decade, although there is a positive correlation between label usage and some positive dietary characteristics in the calorie count report prepared in 2004. Obesity in Turkey also has been increasing according to Turkish Statistics Agency (TUIK) published in 2016, the obesity rate was 15.2% in 2008, but it went up to 19.9% in 2014 (13). In addition to this increase in the rate of obesity, an increase in the rate of obesity in children, serious in recent years in Turkey it was determined to live (14). Of course, this has raised a number of measures, especially for children. Especially for school-age children, it is seen that a number of practices have been implemented which allow them to eat more balanced and perform more physical activities.

It is very important that packaged foods and food label information can be used correctly to help individuals choose the right foods for healthy, adequate and balanced nutrition. The label is an important material that contains information about the product to be purchased and enables communication between the product and the consumer. The labels contain information on the product content such as salt, sugar, fat and carbohydrate content, portion, weight, calorie value, acid content and preservatives. The information contained in the labels has been shown to be effective in reducing the incidence of chronic diseases, such as obesity, diabetes, cardiovascular diseases, and their effects on purchasing behavior.

2.3. The Effect of Label Reading on Consumers' Preferences

Food technology has evolved rapidly over the last decade, and as a result, the diversity of food consumed is increasing at the same rate. This accelerated development in food technology has raised questions about the safety of foodstuffs. Food labels are one of the most important means of eliminating these question marks by providing the consumer with information about the product (15). In addition, the information on the labels contributes to weight control by enabling the consumer to prefer less calorie foods, thus contributing to the prevention of non-communicable chronic diseases associated with obesity and malnutrition (16).

In terms of health protection and maintenance, it is very important that nutrition, which is one of the mandatory needs, is adequate and well-balanced. Today, because of the increase in living standards, the deterioration of the economic situation and the limited time that consumers can devote to preparing food, consumers tend to be prepared more quickly and easily and even to “fast food”. Accordingly, the need for the accuracy and reliability of the information on the labels, especially on ready and semi-ready foods, has increased (17).

In United States of America (USA), a study conducted by the FDA, changes in food labels are expected to reduce non-communicable chronic diseases over the next two decades. (18). The clarity of the information on the labels is especially important for individuals who need to be more careful about nutrition than healthy individuals, such as patients with heart, diabetes and celiac disease, food allergy and intolerance. The information given on the label in the most simple and understandable way, the design of the label, the brand, the placement of the information on the label, the

information on the correct and timely use of the product, symbols and figures should be carefully selected (19).

In a study conducted by Roberto C. et al. (2010) with 303 participants in the USA; participants from the same menu were divided into 3 groups and their preferences were evaluated according to the information in the menus. In the menu given to one of the first group, there is no information about the label and the menu; In the menu given to the second group, only the information about the calorie value of the menu is available, while the menu given to the third group contains information about the calories of the menu and the amount of calories an individual should take. As a result of the study, participants in two groups containing calorie related information preferred 14% less calorie menus than those in the group without any information. Participants in the group containing the calories contained in the menu and the amount of calories that an adult individual should take daily preferred menus containing approximately 250 kilocalories less than the other two groups (20).

In a randomized controlled study with children and their parents in a nursery in the United States, parents were asked to choose from the McDonald's menu for themselves and their children. While one of the groups was not informed about the calorie content of the menus, the other group was given the calorie information contained in the menus. It was shown that the caloric value of the foods selected by the parents in the calorie group was 102 kcal less than the parents in the other group (21).

In a study conducted with 568 individuals in Manisa, the relationship between the socio-demographic characteristics of the participants and the label reading habit was examined. It was observed that socio-demographic characteristics had a significant effect on label reading habits and individuals used media as their primary source of information (15).

In a study conducted in Istanbul in 2011, it was shown that individuals with non-communicable chronic diseases had better habits to read food labels than healthy individuals. Among those with disease, those who were advised to reduce or maintain calorie intake and body weight by a physician or health care professional were more likely to read food labels than those who did not receive any advice in this regard. (19).

In a study of 100,141 participants on food labels in the United States, in general, 25.6% of adults who noticed labels frequently used menu labels, 31.6% reported moderate use, and 42.7% did not use it at all. . Compared to users who had never used it, it was found that frequent users were younger, more female, non-white, more educated, higher income, overweight or obese, physically more active, never smoking or quitting smoking. (16).

2.4. Effect of Packaging

Packaging is a bridge that contains information about the product such as quality, quantity, price, brand in the purchasing process and helps the consumer to make the most suitable choice for him / herself during the selection process, that is, the communication between the product and the consumer. (22).

The fact that produced foods can be easily deteriorated by being affected by external influences (such as temperature, humidity), brings about certain difficulties in the distribution, storage and consumption stages of these foods. Packaging is very important in protecting food from external factors and minimizing these difficulties and providing ease of use. The most important functions of packaging used in food products are(23);

- Protects the product.
- Provides convenience to consumers.
- Simplifies the sell function.
- Provides product differentiation.
- Facilitates product recognition.
- Provides corporate and brand image.
- Creates an opportunity for innovation.
- Performs the promotion function.
- Price adjustment function.
- Provides convenience in transporting goods.
- Fulfills the legal information requirements (24).

Although packaging is often seen as a means of reflecting the basic properties of the product, it also facilitates the storage, protection and transportation of the product. From the manufacturer's point of view, it is also very effective in the competition and marketing process of the companies (22). Packaging is a means of delivering a product to the end consumer without harm and with minimum cost. In short packing; cardboard, paper, wood, plastic, etc are defined as material, which affect the cost and sales of the product, is very important to protect the content of the product, and also provides the opportunity to mark and label the product by informing the consumer (25).

2.5. Effect of the Brand

A brand is defined as a trade name, a special name or a mark that identifies and distinguishes an object. The brand is also a guarantee that manufacturers will offer their products to consumers with the same quality. Successful evaluation of brands depends on perceiving value added by consumers as a result of satisfying their needs in the most appropriate way (26).

In a study, it was seen that the brand is one of the most important factors affecting the choice of the consumer in the selection of products. In the study, it was observed that consumers do not see them frequently and that the small manufacturers find the products bearing the brand name risky in terms of health and therefore they prefer the products bearing the more known big brands. In this study conducted with 542 participants in Izmir, the attitude of consumers towards brands was evaluated. It was observed that price and quality are the most important factors that have an impact on the brand choice of consumers (4).

In a study to determine the effect of brands on the buying process in Iran, it was shown that consumers prefer the more known brand when compared to the more known and less known brands in re-purchased products such as soda and peanut butter (27).

In Australia, a study conducted with 472 participants to examine the effect of the brand on the consumer's choice of product, it has shown that the brand is influential in the buying process for consumers. It has been concluded that brand value, brand identity, brand image and brand awareness have a significant effect on the purchasing decision (28).

2.6. Information Resources of the Consumers about the Food

Consumers are constantly in search of information in order to eliminate information gaps in the products they will purchase. In recent years, increasing income, information technology as a result of the increase in the possibility of easier access to information as a result of the increase in consumer information as a source of information from the state or academic publications, social networks, family and friends in the environment shared information has been seen to benefit from. (29).

With the increase in the variety of products offered to consumers, the number of factors affecting the preferences of consumers increases. This is very important for manufacturers. Active use of communication tools such as advertising, promotion, direct sales, public relations, social media sharing to promote products in a competitive environment affects preferences (30).

In a study conducted with 2104 participants aged 16 and over in the Netherlands, 44.5% of the participants obtained information about food from academic publications and the same participants had higher education levels than the other participants. It was seen that 22.5% of the participants obtained food related information from their social environment and 20.0% benefited from a variety of different sources. It was seen that 13.0% of the participants did not frequently use food sources (29).

In direct sales, the consumer communicates face-to-face with the sales consultant and obtains information about the product. Examples of market sales or direct sales in markets are often seen. Consumers' preferences, needs, expenses, learning process, personality, perceptions, attitudes, belief, culture, social class and family as well as the features of the product he wants to buy, price, brand, product-related incentives and advertisements are among the factors affecting preferences (31).

Advertising is considered to have the greatest impact on the purchase process. While the most effective technological means of advertising to reach consumers in the previous periods was described as televisions, nowadays, the solidity of social media, smart phones, is increasing significantly. With the increase in the use of smart phones, it is known that the ads published on social media are increasing day by day. Advertisements make consumption a more natural need and thus direct individuals to the consumption of products in addition to their needs. Today, advertising is also used by consumers as a source of information. Through advertisements, consumers can

quickly access information about the price, content, and where they can be found by the consumer. Since the ease of obtaining information is important for individuals with limited time, advertisements are considered by consumers as a source of information quickly and cheaply (32).

500 randomized participants were included in a study to investigate the effect of media advertisements on consumer preferences in Tekirdağ. As a result of the study, it was determined that product preference of the 57% of the participants in the study were affected. It was seen that the media has affect on purchasing desicion of the 66% of the participants (33).

2.7. Food Safety

Food safety covers the production, processing, storage, transportation and distribution of foodstuffs from farm to table under appropriate conditions (34). Food safety, healthy eating and food safety are interrelated concepts. Unreliable foods threaten the health of individuals. Therefore, it is very important to develop effective food safety systems in order to provide reliable foods from the beginning of the food chain (from production, field) to the dining table.

2.8. Food Safety Certificates

Food safety; food hazards associated with food consumption during consumption. Any situation that may threaten food safety can occur at any time in the food production chain. Therefore, controls should be provided and improved at all levels of the food chain.

Controls from the primary producer to the food processing company can be ensured through the cooperation of all participants, from transport to storage. Food safety certificates covering the requirements of the food safety management system have been developed to ensure the safety of the units in the food chain during the consumption of food and to minimize the threats to food safety (35). Turkish Standards Institute (TSE) and European Union Standards seal, which are the two main certifications used in our country, are given below.

2.8.1. Turkish Standardization Institute (TSE)

The Turkish Standards Institute was established by law no. 132 dated 18.11.1960 in order to make all kinds of materials and products, and procedures and service

standards. TSE's duties include preparing food-related standards, auditing standards and, where appropriate, publishing standards and developing standards-related projects at the request of the public and private sectors. In addition, to conduct scientific and technical examinations on standards, to follow research in foreign countries, to publish and research on standardization with scientific institutions such as universities, to control the functioning of standards and to create reports, to organize courses for the development of standards and to organize seminars, to carry out studies on metrology and calibration (44). Figure 2.2 shows the seal of the Turkish Standards Institute.

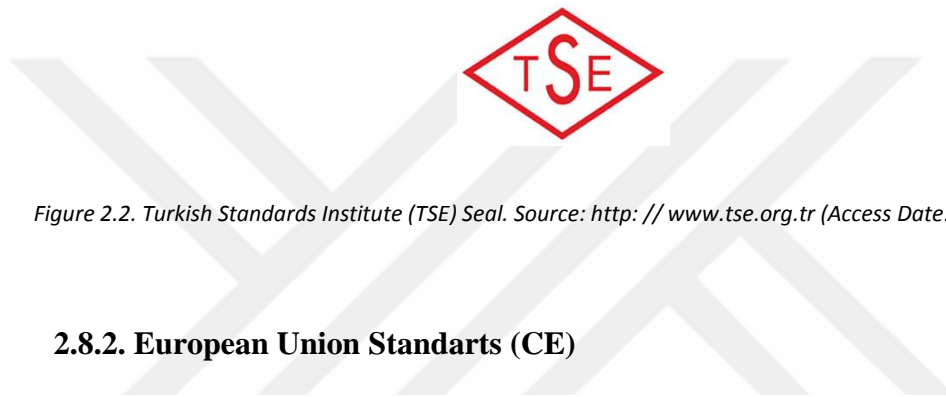


Figure 2.2. Turkish Standards Institute (TSE) Seal. Source: <http://www.tse.org.tr> (Access Date: 15.05.2019) (TSE)

2.8.2. European Union Standards (CE)

Conformite European (CE) contains the mandatory requirements for health, safety, environmental and consumer protection for certain products, since it has been introduced in 1985. This means that a product with the CE mark is an indication of compliance with the conditions set out in the relevant directive of the EU in terms of life and property safety of humans, animals and plants and is not related to quality. For example, a pen may be good for life and property safety, but may not write well. So the quality may not be the best. Figure 2.3 shows the seal of the European Union Standards. The main features of the CE marking are (36):

- Applicable in all EU countries.
- Amend the national legislation of the EU regulations on CE marking.
- Indicates that the criteria specified for the product with this mark have been complied with by the manufacturer and that the necessary conformity study has been carried out.
- Products with CE marking must comply with all the criteria specified in the relevant directives.

- Another feature related to the CE marking is that the marks that show the national standards of the countries do not reveal the existence of the CE. That is, it is wrong to think that a TSE standard product also has the CE mark.
- As it can be seen when the products covered by the directives for CE marking are examined, the regulations stipulate the safety of human life and property, health, protection of the environment and energy saving.
- The adopted directives and related standards are published in the Official Journal of the EU and come into force.
- Since the basic assumption regarding the CE marking is that the manufacturer himself ensures and checks the conformity of the product produced with the relevant directive, he also places the CE mark on the product. There is no organization that gives the CE mark.
- If an accident occurs due to a product bearing the CE marking, or if it is claimed by one of the EU member states that the marking requirements are not fully fulfilled, the manufacturer must prove that all the necessary criteria have been fulfilled and that there is no fault arising from its own fault.



Figure 2.3. European Union Standards (CE) Seal. Source: <https://www.cgstestmerkezi.com/ce-document-needir-ne-ise-yarar/> (Access Date: 15.05.2019)

3. RESEARCH METHOD

3.1. Research Place, Time and Sample Selection

This study is a cross - sectional study conducted between April - May 2019 in which the effect of label reading habit related approaches on healthy eating attitudes of adult consumers over 18 years of age living in Izmir were evaluated. Within the scope of the research, the habit of reading the labels of the food, the perceptions of the food brands and their packaging, the level of knowledge and approaches on the information on the labels were evaluated and whether the healthy eating behaviors were affected by these variables were examined.

This study was approved by the Ethical Committee of Ege University Non-Interventional Research with Decision No. 99166796-050.06.04 and Decision No. 19-4T / 51. All individuals included in the study were informed and informed Volunteer Consent Form (Form 17) was read and signed by the participants and the responsible researcher. Participants were excluded from the study if they wanted to leave the study despite being volunteer. Individuals who did not meet the criteria for inclusion in the study were excluded. Participants were informed about the study and volunteers were included in the study.

The criteria for inclusion and exclusion are as follows:

Inclusion criteria:

- To be living in Izmir,
- Being older than 18,
- Being literate,
- Not have been diagnosed with any psychiatric diagnosis,

The population of the study consists of individuals older than 18 years of age living in Izmir. Using the Open Epi "sample size calculation method", it was calculated that at least 83 participants should be included in order to obtain a 95% confidence interval and 90% power level among healthy volunteers. 132 volunteers were included in the study considering the losses that may occur during the study.

3.1.1. General Plan of the Research and Data Collection

As a result of the literature review, a questionnaire was developed by the researchers by taking expert opinions. Data were collected between April 2019 and May 2019. Individuals were informed about the questionnaire to be administered, and the appointment took place at home or at work or at an external location. The questionnaire was applied face to face to all participants. Information about the sections of the survey is given below. The questionnaire developed for the research consists of three sections and a total of 68 questions. First part include questions about the personal characteristics of the participants, second part, questions about health and healthy nutrition, third part, about information on the food labels.

3.1.2. Personal Information (Socio-Demographic Characteristics)

Gender, marital status, age, education level, employment status and average monthly income were questioned.

3.1.3. Health and Healthy Diet Related Questions

Cigarette and alcohol use of individuals, the number of main-meals consumed, whether they skip meals, which skipped meals generally skipped, the consumption of fruit, vegetables, protein, carbohydrates, carbonated drinks consumed per week and physical activity status were questioned. In addition, the anthropometric measurements of the individuals was obtained in this part of the questionnaire.

3.1.3.1. Anthropometric Measurements

In this section, height and body weight of individuals were asked, waist circumference values was measured, and body mass index (BMI) was calculated by dividing the body weight (kg) of the individuals by the square of their length (m^2). The values found are classified according to the WHO criteria in Table 3.1. (37).

Table 3.1. Body Mass Index classification as determined by WHO (37).

Classification	BMI (kg/m²)
Underweight	<18,50
Normal weight	18,50-24,99
Pre-obesity	25,00-29,99
Obesity	≥30,00
Obesity class I	30,00-34,99
Obesity class II	35,00-39,99
Obesity class III	≥40,00

3.1.4. Questions about Label Reading Habits

In this section, in general, individuals' label reading habits are questioned. Individuals were questioned whether they had read the labels on the package, which information they had on the labels, which TSE and CE seals meant, why they did not read the labels and whether they found the information on the labels sufficient. Individuals were asked to mark the options that best match their ideas from labels that reflect similar or identical information about the product.

3.2. Evaluation of Data

All the data obtained from the research were evaluated by using Statistical Package for Social Sciences (SPSS) 20 and all tables were created with the help of this program. Mean (\bar{X}) \pm standard deviation (SD), minimum and maximum values were used. Chi-square test was used to compare categorical data between the groups. Distribution characteristics of the data were evaluated by Shapiro-Wilk test. The t-test or Mann Whitney U test was used according to the distribution characteristics of the data (normal distribution or non-compliance). In the comparison of dependent data, dependent sample t-test and one-way analysis of variance tests were applied. ANOVA analysis was used for correlation analysis (38). $p < 0,05$ was taken as the statistical significance criteria.

4. RESULTS

4.1. Label Reading Habits, Socio-Demographic Characteristics of the Individuals by Gender

In Table 4.1, it is seen that 65.2% of female individuals and 66.7% of male individuals have the habit of reading food labels. As the food label reading habit of male and female individuals had similar results, no statistically significant difference was found between gender and food label reading habit.

Table 4.1. Individuals' answers to the question “Do you read the labels on the products you buy?” by gender

	Female		Male		Total	
	N	%	N	%	N	%
Yes	43	65,2	44	66,7	87	65,9
No	3	4,6	8	12,1	11	8,3
Sometimes	20	30,3	14	21,2	34	25,8
Total	66	50,0	66	50,0	132	100

Table 4.2. Socio-Demographic Characteristics of the Individuals by Gender

		Male		Female		Total	
		N	%	N	%	N	%
Marital Status	Single	33	50,0	33	50,0	66	50,8
	Married	33	51,6	31	48,4	64	49,2
$X^2=0,36^* p=0,75$							
Age Group	18-30	11	23,4	36	76,6	47	35,6
	30-40	11	34,4	21	65,6	32	65,6
	40-50	24	80,0	6	20,0	30	22,7
	50+	23	92,0	2	8,0	25	18,9
$X^2=4,21^* p=0,04$							
Educational Status	Primary Sc.	21	100	0	0	21	15,9
	Secondary Sc.	13	92,9	1	7,1	14	10,6
	College	4	40,0	6	60,0	10	7,6
	High Sc.	4	36,4	7	63,6	11	8,3
	University	19	33,3	38	66,7	57	43,2
	Master Deg.	5	38,5	8	61,5	13	9,8
	PhD	5	50,0	5	50,0	10	7,6
$X^2=24,25^* p=0,00$							
Employment situation	Self-employment	12	57,1	9	42,9	21	15,9
	Private-sector	14	51,9	13	48,1	27	20,5
	Public-sector	16	55,2	13	44,8	29	22,0
	Unemployed	9	24,3	28	75,7	37	28,0
	Retired	16	88,9	2	11,1	18	13,6
$X^2=4,44^* p=0,013$							
Average Monthly Income	1.000 ₺ and below	8	40,0	12	60,0	20	15,2
	1.001 - 2.500 ₺	8	40,0	12	60,0	20	15,2
	2.501 - 4.000 ₺	15	60,0	10	40,0	25	18,9
	4.001 - 5.500₺	16	53,3	14	46,7	30	22,7
	5.500 ₺ and above	22	62,9	13	37,1	35	26,5
$X^2=4,10^* p=0,00$							

* Chi-square test was applied.

Table 4.2. summaries socio-demographic characteristics of the individuals by gender. 50,0% of the males and 48,4% of the females were married. In this study, majority of the females were between the ages of 18-40 (n=56; 86,4%), however in men the majority is above 40 years old (n=47; 71,2%)(p<0,05). And also, while 77,3% of the females graduated from a Bachelor's or higher degree, only 43,9% of the males have a university degree (p<0,05). Compared to men, there were more unemployed women in the study, however there were no difference between average montly income of men and women.

4.2. Nutritional Habits, Physical Activity Status and Anthropometric Measurements and Gender of Individuals

Table 4.3. Nutritional Habits, Physical Activity Status and Anthropometric Measurements of Individuals and gender

		Men		Women		Total	
		N	%	N	%	N	%
Skipped Meal	Breakfast	6	50,0	6	50,0	12	9,1
	Lunch	9	52,9	8	47,1	17	12,9
	Dinner	1	33,3	2	66,7	3	2,3
	Snacks	27	48,2	29	51,8	56	42,4
$X^2=2,75^* p=0,69$							
Red meat consumption	Never	1	14,3	6	85,7	7	5,3
	< once / month	7	50,0	7	50,0	14	10,6
	1-3 times / month	27	67,5	13	32,5	40	30,3
	once / week	19	55,9	15	44,1	34	25,8
	2-3 times / week	10	41,7	14	58,3	24	18,2
	3-7 times / week	4	40,0	6	60,0	10	7,6
	> 7 times / week	1	100	0	0,0	1	0,8
$X^2=0,96^* p=0,89$							
Vegetable consumption	<Once / day	6	33,3	12	66,7	18	13,6
	Once / day	37	56,1	29	43,9	66	50,0
	Twice / day	17	50,0	17	50,0	34	25,8
	3 times / day	7	63,6	4	36,4	11	8,3
	> 3 times / day	1	25,0	3	75,0	4	3,0
$X^2=^* p=0,$							
Waist / Height Ratio	Low Risk (<0,54)	50	46,3	58	53,7	108	81,8
	High Risk (≥0,54)	16	69,6	7	30,4	23	17,4
$X^2=^* p=$							
BMI	<18,50	0	0,0	11	100	11	8,3
	18,50-24,99	22	35,5	40	64,5	62	47,0
	25,00-29,99	23	76,7	7	23,3	30	22,7
	30,00-34,99	12	75,0	4	25,0	16	12,1
	35,00-39,99	1	50,0	1	50,0	2	1,5
	≥40,00	3	60,0	2	40,0	5	3,8
$X^2=0,^* p=0,$							

** Chi-square test was applied.*

Most skipped meal for both men and women was Snack(s) and there were no statistical difference between women and men according to red meat and vegetable consumption. More men was at high risk when waist / height ratio were taken into consideration than women (24,2% - 10,8%; $p > 0.05$). Less men had lower than 30,00 BMI than women (45 - 58; %73,8 – %87,9, $p < 0.05$).

Table 4.3. (Cont.) Nutritional Habits, Physical Activity Status and Anthropometric Measurements of Individuals and Gender

		Men		Women		Total	
		N	%	N	%	N	%
Emphasis on health	Yes	60	49,2	62	50,8	122	92,0
	No	6	60,0	4	40,0	10	8,0
$X^2=0,41^* p=0,66$							
Regular Meal	Yes	46	51,7	43	48,3	89	67,0
	No	20	46,5	23	53,5	43	33,0
$X^2=0,94^* p=0,70$							
Smoking	Yes	22	57,9	16	42,1	38	28,8
	No	44	46,8	50	53,2	94	71,2
$X^2=0,46^* p=0,25$							
Alcohol Use	Yes	37	50,0	37	50,0	74	56,1
	No	29	50,0	29	50,0	58	43,9
$X^2=0,85^* p=0,23$							
Regular Physical Activity	Yes	36	51,4	34	48,6	70	53,0
	No	30	48,4	32	51,6	62	47,0
$X^2=1,16^* p=0,55$							
“Fast food” consumption (weekly)	Less than 1	22	34,4	42	65,6	64	48,5
	Once	24	66,7	12	33,3	36	27,3
	Twice	11	64,7	6	35,3	17	12,9
	3 times	8	66,7	4	33,3	12	9,1
	More than 3 times	1	33,3	2	66,7	3	2,3
$X^2=5,96^* p=0,04$							
Carbonated drink consumption (weekly)	Once	23	33,8	45	66,2	68	51,5
	Twice	21	77,8	6	22,2	27	20,5
	3 times	1	20,0	4	80,0	5	3,8
	4 times	7	63,6	4	36,4	11	8,3
	5 times and more	14	70,0	6	30,0	20	15,2
$X^2=3,12^* p=0,66$							

* Chi-square test was applied.

In this sample, there were not significant difference between men and women according to nutritional habits, physical activity status and healthy lifestyle choices. Only statistically significant difference between men and women was fast food consumption. 31,8% of the men consumed fast food more than 4 times a week compared to 14,5% for the women ($p < 0,05$).

Table 4.4. Ratio, mean and standard deviation values of anthropometric measurements of individuals and gender

	Female (n=66)			Male (n=66)		
	$\bar{x} \pm SD$	Min.	Max.	$\bar{x} \pm SD$	Min.	Max.
Body weight (kg)	61,42 ± 12,09	40,0	100,0	82,23 ± 12,19	58,0	113,0
Height (cm)	164,14 ± 5,52	150,0	177,0	176,72 ± 7,11	160,0	190,0
BMI (kg/m²)	22,87 ± 4,90	16,23	40,06	26,42 ± 3,76	20,02	33,63
Waist circumference (cm)	73,98 ± 12,10	58,0	118,0	85,58 ± 16,29	38,0	120,0
Waist C. / Height Ratio	0,45 ± 0,08	0,36	0,75	0,48 ± 0,12	0,22	0,69

In Table 4.4, the mean body weight of the participants was 61,42 ± 12,09 kg for females, 82,23 ± 12,19 kg for males, 164,14 ± 5,52 cm for females and 176,72 ± 7,11 cm for males. The average BMI of women 22.87 ± 4.90 kg / m², 26.42 ± 3.76 kg / m² for men, the average waist circumference of women 73.98 ± 12.10 cm, 85.58 ± 16,29 cm for men. The waist / height ratio was 0.45 ± 0.08 in women and 0.48 ± 0.12 in men.

4.3. Information on Standard Seals, Abbreviations and Other Terms in Food Labels According to Gender

Table 4.6 shows that the participants who knew the meaning of “NBS” were 65,6 % men and 34,4 % women ($p < 0,05$), and for the “GMO” 50,4 % male and 49,6 % women. And of all participants 73,5 % knew the meaning of the English word “low fat / fat free” and 90,2 % knew “light / sugar free”.

Table 4.5. Knowledge of abbreviations and other terms on food labels and gender

		Men		Women		Total	
		N	%	N	%	N	%
Do you know that “NBS” refers to “Starch Based Sugar”?	Yes	42	65,6	22	34,4	64	48,5
	No	24	35,8	43	64,2	67	51,5
$\chi^2=2,45^* p=0,03$							
Do you know that “GMO” refers to “Genetically Modified Organism”?	Yes	64	50,4	63	49,6	127	96,2
	No	2	40,0	3	60,0	5	3,8
$\chi^2=0,67^* p=0,77$							
Do you know the meaning of “low fat” or “fat free” on foreign products?	Yes	45	46,4	52	53,6	97	73,5
	No	21	61,8	13	38,2	34	25,8
$\chi^2=0,84^* p=0,096$							
Do you know the meaning of “light” or “sugar free” on carbonated drinks?	Yes	56	47,1	63	52,9	119	90,2
	No	10	30,0	3	70,0	13	9,8
$\chi^2=0,45^* p=0,88$							

* Chi-square test was applied.

Table 4.6. Knowledge about standard seals on foods labels and gender

		Men		Women		Total	
		N	%	N	%	N	%
Do you know that “TSE” is the seal of Turkish Standards Institute?	Yes	65	50,8	63	49,2	128	97,0
	No	1	25,0	3	75,0	4	3,0
$\chi^2=0,75$ * $p=0,96$							
Do you know that “CE” is the seal of European Union Standards?	Yes	46	57,5	34	42,5	80	60,6
	No	23	42,6	31	57,4	54	39,4
$\chi^2=0,5,25$ * $p=0,026$							

* *Chi-square test was applied.*

Table 4.5. show the knowledge about standard seals on food labels according to gender. There were no statistical difference between men and women according to familiarity of “TSE” seal. When “CE” seal knowledge is considered men knew “CE” seal more than women ($p<0,05$).

4.4. Attitudes of Individuals towards Information on Food Labels

Participants answered “Can you fully understand the technical information of the participants on the label?” as 31.8 % Yes, 25.0 % No and 43.2 % sometimes (Table 4.7.). There was a statistically significant relationship between gender and understanding the information on the labels (28, 66,7% vs 14, 33,3%) ($p < 0.05$). 88.6% of the participants think that the information on the label should be simpler, 97.7% of them think that labels should have the daily needs of energy and other nutritional values. It is seen that women read labels even though the product belongs to brand they usually buy but there were no statistical significance ($p > 0,05$).

Table 4.7. Attitudes of individuals towards information on food labels and label reading habits

		Men		Women		Total	
		N	%	N	%	N	%
Can you fully understand the technical information on the labels?	Yes	28	66,7	14	33,3	42	31,8
	No	18	54,5	15	45,5	33	25,0
	Sometimes	20	35,1	37	64,9	57	43,2
$\chi^2=1,85^* p=0,02$							
Would you like the information on the label to be easier to understand?	Yes	63	53,8	54	46,2	117	88,6
	No	3	20,0	12	80,0	15	11,4
Do you think that labels should have the daily nutritional requirements information?	Yes	63	50,0	63	50,0	126	95,5
	No	3	50,0	3	50,0	6	4,5
$\chi^2=0,71^* p=0,99$							
Should energy and nutritional status be written on the package?	Yes	63	50,0	63	50,0	126	95,5
	No	3	50,0	3	50,0	6	4,5
$\chi^2=0,71^* p=0,99$							
Would you look at the product label of a brand you buy constantly?	Never	1	20,0	4	80,0	5	3,8
	Rarely	19	52,8	17	47,2	36	27,3
	Sometimes	28	53,8	24	46,2	52	39,4
	Usually	13	54,2	11	45,8	24	18,2
	Always	5	33,3	10	66,7	15	11,4
$\chi^2=1,21^* p=0,65$							

* Chi-square test was applied.

4.5. Knowledge Status of Individuals of Information on Food Labels by Gender

Of the respondents answered “Yes” to the question “would you look at the date and breeding codes on the eggs” were 53,8 % men and 46,2 % women. Women read and apply the storage conditions more compared to men according to Table 4.8. ($p < 0,05$).

Table 4.8. The importance given by individuals to the information on the food labels by gender.

		Men		Women		Total	
		N	%	N	%	N	%
Would you look at the date and the breeding codes on the eggs?	Yes	49	53,8	42	46,2	91	68,9
	No	17	41,5	24	58,5	41	31,1
$\chi^2 = * p = 0,$							
Do you read and apply the storage conditions that written on the products?	Never	8	88,9	1	11,1	9	6,8
	Rarely	14	87,5	2	12,5	16	12,1
	Sometimes	19	52,8	17	47,2	36	27,3
	Usually	19	41,3	27	58,7	46	34,8
	Always	6	24,0	19	76,0	25	18,9
$\chi^2 = * p = 0,$							

** Chi-square test was applied.*

Table 4.9. The status of individuals caring about the information on food labels

		Men		Women		Total	
		N	%	N	%	N	%
Which products do you look for expiration dates?	Processed Meat Products	55	54,5	56	45,5	101	76,5
	Dairy products	58	48,3	62	51,7	120	90,5
	Canned food	31	34,1	60	65,9	91	68,9
	Frozen Products	32	41,6	35	58,5	77	58,3
Which components do you look for the most on the label?	Salt	14	56,0	11	44,0	25	19,1
	Sugar	37	53,6	32	46,4	69	52,7
	Fat	17	29,8	40	70,2	57	43,5
	Carbohydrate	13	31,7	28	68,3	41	31,3
	Calories	18	22,5	62	77,5	80	61,1
	Preservatives	18	27,3	48	72,7	66	50,4
	Additives	34	40,5	50	59,5	84	64,1
	Asid	9	56,3	5	43,8	16	12,2
If you think there is no need to read the product label, what could be your justification?	Because it is a well-known brand	42	62,7	25	37,3	67	64,4
	Because the information is not reliable	16	38,1	26	61,9	42	40,4
	Because I do not understand what is written	19	42,2	26	57,8	45	43,3
	Because fonts are small	11	27,5	29	72,5	40	38,5

Table 4.9 shows the reasons for the participants not to read the label and which of the information on the label is important. The answers given by the participants to the question of “which do you look at their expiration dates” are 90.5% Dairy Products, 76.5% Processed Meat Products, 68.9% Canned Foods and 58.3% Frozen Products. The answers marked by the participants to the question of which components do you look at the most are 64.1% Additive, 50.4% Preservative, 61.1% Calories (Energy amount), 52.7% Sugar, 43.5% Fat, % 31.3 Carbohydrate, 19.1% Salt and 12.2% Acid. If you think that there is no need to read the product label, the answer to the question of what may be your justification 64.4% is a known brand, 43.3% is written because it is not understood, 38.5% because the fonts are small and 40.4% because the information is unreliable.

5. DISCUSSION

5.1.Socio-demographic Characteristics, Nutritional Habits, Physical Activity Status and Anthropometric Measurements of Individuals According to Gender and Label Reading Habits

Considering the impact on the food label reading habit of gender, men (66,7%) read labels more than females (65.2%) however, statistically significant difference was not found (Table 4.1.). Women in a study conducted in Turkey, female participants read food labels more often than male participants (39). The reason of equal label reading habits of our participants according to gender may be the various income and educational level of our participants. 90 participants in this study has income level of 2501₺ and above, of this 90 participants 53 (58,9 %) were men and 37 (41,1 %) were women. It was observed that there was a statistically significant difference between the increase in income level and the habit of reading food labels (Table 4.2.). In present study 33.3 % of men and 24.2 % of women were smokers, for both men and women 61.1% did not consume alcohol. Any statistical difference between gender and tobacco and alcohol consumption were found. there is no difference between label reading habits and tobacco and tobacco products use and alcohol consumption (Table 4.3.). The use of tobacco and tobacco products is very common in the world and similarly in our country. And it is well known that individuals who use tobacco products have health problems and lose their lives due to tobacco use. (40). In a study conducted by Artazcoz L. et al., tobacco use and alcohol consumption were higher in men than in women. (41). In present study any difference between men and women by the means of tobacco use and alcohol consumption was found.

In this study, it was seen that 67.0 % of all participants had regular meals, 51.7 % were men and 48.3 were women. 12.9% of all participants stated that they skipped breakfasts, 12.9% lunches, 2.5% dinners, and 66.7% skipped snacks. No statistically significant difference was observed between skipped meals and food label reading status (Table 4.3.).

In a study conducted in Ankara, it was found that 78.0% of participants had 3 main meals a day. 36.4% of the participants who skipped the main meals, and 24.1% of the participants who did not skip the main meals were obese and the difference was statistically significant (42). In this study, 65.26% of the participants who skips meal,

had a BMI of 25.00 kg / m² or more because they skipped main meals and snacks thus they consumed more food than needed with intense hunger. In addition, the fact that 7 individuals with a BMI of 40.0 kg / m² and above do not have a habit of reading labels emphasizes the importance of the relationship between labeling and the importance given to health. In a study conducted with 23,153 participants in Europe, participants who have the low risk of non-communicable chronic diseases, habit of balanced and healthy nutrition, physical activity of approximately 3.5 hours per week, had a BMI of <30, stated that they read the food label during shopping (43). It is considered that individuals who do not consume regular meals, do not make healthy food choices, who consume high amounts of tobacco and alcohol and who do not perform regular physical activity, are considered to have a high probability of developing chronic diseases in the following years unless they develop healthy habits (43).

It has been shown in a study that the intensity of working life adversely effect the time allocated to physical activity (41). In this study, we found that 53.0 % of all participants (54.5 % of men and 51.5 % of women) stated that they do regular physical activity (Table 4.3.). 61.0% of the individuals participating in the study stated that they have a regular job. Thus, it is considered that there is not enough time for regular exercise due to the long working hours as a reason of the low number of individuals indicating that they are exercising.

Turkey Nutrition and Health Survey (TBSA) 2010 showed that approximately 72.1% of individuals in the 19-30 age group report that they engage in sports for 30 minutes or more times per week, the number of individuals engaged in physical activity with increasing age was noted that the decrease (44). In a study, it was seen that the individuals who consume high carbohydrate and fat-containing foods and exercise less has BMI of 30 kg / m² and above (45). In another study, unhealthy food consumption and insufficient physical activity were associated with weight gain (46). Only 52.9% of the individuals who participated in this study stated that they do regular physical activity. As a result of unhealthy eating habits and lack of regular physical activity, it is foreseen that most of the individuals participating in the study will not be able to control body weight and many chronic diseases, especially obesity, may develop in these individuals in the following years.

Anthropometric measurements of the individuals participating in this study are shown in Table 4.3. and Table 4.4. Making healthy choices through food labels will

facilitate body weight control and help keep the Waist / Height ratio at low risk limits. It is seen that more men were in preobese and obese classification according to WHO (Table 3.1.), compared to women (44, 66.7%; 14, 21.2)($p < 0.05$). When the waist / height ratios are examined, it is seen that approximately one quarter of the participants are in the high-risk group (Table 4.4.). When these results are considered, it is thought that the individuals involved in the study have the risk of developing obesity and associated chronic diseases. In a study, it was stated that balanced nutrition and keeping BMI $< 25 \text{ kg} / \text{m}^2$ are beneficial for adult individuals to maintain a healthy life (47). Studies have shown that the Waist / Height ratio is associated with hypertriglyceridemia, diabetes, cardiovascular diseases, hypertension, and increased waist / height ratio increases the risks for these diseases (48–50).

5.2. Information on Standard Seals, Abbreviations and Other Terms in Food Labels and Label Reading Habits by Gender

97.0 % of the individuals participated in this study are familiar with “TSE” seal and 66.6 % of them knew what “CE” seal means. Women know both local and international seals more than men (Table 4.6). In a study conducted in Germany, Spain, France and Italy, it was observed that there was a relationship between the knowledge of food standard certificates and gender, parallel to our finding, they found that the women read and understand labels better than men (48).

Table 4.6 shows that the participants who knew the meaning of “NBŞ” were 65,6 % men and 34,4 % women ($p < 0,05$), and for the “GMO” 50,4 % male and 49,6 % women. And of all participants 73,5 % knew the meaning of the English word “low fat / fat free” and 90,2 % knew “light / sugar free”. In a systematic review by Cowburn G. et al., Although some consumers may understand some of the information about nutritional labeling, they find that nutritional labeling in general is confusing, and it is particularly difficult to understand some of the technical and numerical information used. Consumers are able to understand the basic terms such as "fat", "calorie / kilocalories", "sugar", "vitamin" and "salt," but "calories and energy", "sodium and salt", "sugar and carbohydrates" and "cholesterol and fatty acids” reported that they do not know the difference. It is thought that people with lower levels of education or income will find it most difficult to understand the terms used in food labels. (51). In this study, no statistical difference was found between income level or education level and understanding food labels ($p > 0,05$).

In a study conducted in Italy, it was aimed to investigate the effect of nutritional information levels of 400 individuals selected by random sampling on label reading habits. According to the results of the research; food label reading levels were generally low, but the level of understanding of food labels was found to be high. This situation; shows that using food labels depends more on the level of interest in healthy eating. (52). In a study conducted on 99 male and 214 female consumers in Istanbul, it was aimed to evaluate the labels of consumers and identify the deficiencies in the label information. According to the results of the research; label reading habits among consumers were 56% and a positive correlation was found between increase in education level and label reading habits ($p < 0.05$) (53).

5.3. Individuals' Attitudes Towards Information on Food Labels

A study with 1536 individuals selected by random sampling method, living in 26 different states of Turkey aged between 12-56, conducted in order to evaluate the level of usage of information on food labels and the reasons for not using label information were investigated. In this study, reasons such as lack of understanding of terms, symbols and values, poor presentation of information, concern about the accuracy of information, and small text were found to be an obstacle for reading food labels (54). In a study conducted in Istanbul in 2010, it was shown that having sufficient information about the product taken as a reason not to read the label and that the articles were small. It was determined that the information on the label was not adequately audited and that the label was not trusted. The most important points for reading the label are expiration (84%) and production dates (58.2%) (53).

In a study conducted with 116 subjects in Kastamonu, consumers; The importance of the use of packaged foodstuffs according to income groups, education level, gender, age and occupation was examined. Research findings indicate that food safety is more important for consumers than the expiration date (55). The 200 participants living in Croatia paid attention to their sugar and fat content, ingredients and list of ingredients when examining their food labels. In addition, it was determined that the same group thought that the food labeling policy was useful, the information on the food label was understandable and useful when making food selection. In addition, it was found that the use of information on the label was significantly affected by education level and knowledge level. (56).

In addition, it was found that the majority of men (71%) read the food labels for the price of the food and the majority of women (79%) read the food labels for the energy value of the food. In addition, women are more aware of nutritional declarations than males, especially to nutritional statements such as “do not contain trans fat” (23.5%, 21%) and “low fat / non-fat” (23.3%, 20.5%) It was determined that it was the most read nutrition statements, organic statement in vegetables and fruits was the most remarkable statement (52%) and the statement that low cholesterol contributes to health protection was the most read health declaration. (57). In a study which examined the attitudes and behaviors of 167 people in Istanbul Ümraniye regarding the purchase of food products, it was found that 39.6% of the participants did not pay attention to the expiration date and 28.8% did not pay attention to the mineral substances contained in the product (58). In addition, it has been found that the use of labels in purchasing is not widespread among consumers and that the institutions that inspect food products are not well known to consumers (59).

In this study, we observed that only 31.1% answered Yes to the question “Do you fully understand the technical information on the labels?” in parallel with other studies. There were statistically significant relationship between understanding the information on labels and gender (28, 42.4%; 14, 21.2%) ($p < 0.05$) (Table 4.7.). 88.6% of the participants in this study think that the information on the label should be simpler, 97.7% of them think that, the amount of meeting the daily needs, energy and nutritional values should be included. It is seen that 13.6% of the participants declaring that they read the labels continuously, even look at the product label of the brand they usually buy.

6. CONCLUSIONS

The aim of this study was to evaluate the habits and perception of label reading in terms of healthy eating behaviors of adult individuals. It is ought to shed light on future studies. In this context, the following recommendations have been developed regarding the food label reading habits of individuals, their opinions about packaging and brand, and their views on food safety:

In this study, it was observed that individuals pay attention to the production and last consumption date of the product. It has been seen that individuals read the label even when buying their preferred brand. In addition to packaging and branding issues, informative training materials should be prepared to address all questions related to food manufacturers, foods produced and their inspections in general. The right information should be provided with these materials instead of information that is wrong, confusing and suspicious to individuals and affects their preferences.

It was also seen that individuals know the TSE seal, but they did not have information about international standard seals, especially men. The fact that individuals have inadequate information about these certificates, which make all the arrangements about the production, preparation and storage conditions of foods, develop inspection mechanisms and ensure that they are implemented, and indicate that they have access to food-related information from the media, indicate that information pollution is confusing for the consumers. Individuals can make the right decisions about the products if they have access to information from the right sources which can be improved by providing trainings on food safety. In this context, it is thought that simple public service announcements (PSA) and advertisements that provide information about the definition, purpose and functioning of food safety certificates may be effective.

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Appendix A: SURVEY

NOT: Aşağıdaki sorulara vereceğiniz yanıtlardan elde edilecek veriler sadece toplumun etiket okuma alışkanlığının belirlenmesinde kullanılacaktır. Araştırmaya katılmayı kabul ettiğiniz için teşekkür ederiz. Aşağıdaki soruları cevaplandırırken lütfen size en çok uyan cevabın yanındaki kutucuğu işaretleyiniz.

1. KİŞİSEL ÖZELLİKLER

1.Cinsiyetiniz	Kadın <input type="checkbox"/> Erkek <input type="checkbox"/>
2.Medeni durumunuz	Bekar <input type="checkbox"/> Evli <input type="checkbox"/>
3.Yaş grubunuz	18-30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 40-50 <input type="checkbox"/> 50+ <input type="checkbox"/>
4.Eğitim durumunuz	İlkokul <input type="checkbox"/> Orta eğitim <input type="checkbox"/> Yüksekokul <input type="checkbox"/> <u>Lise</u> <input type="checkbox"/> <u>Üniversite</u> <input type="checkbox"/> Yüksek Lisans <input type="checkbox"/> Doktora <input type="checkbox"/>
5.İstihdam durumunuz	Serbest Meslek <input type="checkbox"/> Özel Sektör <input type="checkbox"/> Kamu Sektörü <input type="checkbox"/> Çalışmıyor <input type="checkbox"/> Emekli <input type="checkbox"/>
6.Ortalama aylık geliriniz	1.000 ve altı <input type="checkbox"/> 1.001-2.500 <input type="checkbox"/> 2.501-4000 <input type="checkbox"/> 4.001- 5.500 <input type="checkbox"/> 5.501 ve üstü <input type="checkbox"/>

2. SAĞLIK VE SAĞLIKLI BESLENME İLGİLİ SORULAR

7.Sağlığınıza önem veriyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
8.Öğünleriniz düzenli mi?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
9. Günde kaç öğün yersiniz? öğün/gün
10. Genelde hangi öğünü atlıyorsunuz?	Kahvaltı <input type="checkbox"/> Öğle <input type="checkbox"/> Akşam <input type="checkbox"/> Ara öğün(ler) <input type="checkbox"/>
11.Sigara içiyor musunuz?	Evet <input type="checkbox"/> adet /gün Hayır <input type="checkbox"/>
12.Alkol kullanıyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
13.Eğer kullanıyorsanız ne sıklıkla kullanıyorsunuz?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
14. Düzenli fiziksel aktivite yapıyor musunuz? (Yanıtınız 'Evet' ise hangisi/hangileri olduğunu belirtiniz, 'Hayır' ise 15 ve 16. soruları atlayınız.)	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>

15. Haftada ne sıklıkta fiziksel aktivite yapıyorsunuz?	1-2 gün/hafta <input type="checkbox"/> 3-4 gün/hafta <input type="checkbox"/> 4 günden daha fazla <input type="checkbox"/>
16. Yapmış olduğunuz fiziksel aktivite süresi ne kadardır?	20-30 dakika <input type="checkbox"/> 31-60 dakika <input type="checkbox"/> 1 saatten daha fazla <input type="checkbox"/>
17.Önemli bir ameliyat geçirdiniz mi? (Cevabınız evet ise belirtiniz)	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
18.Herhangi bir kronik hastalığınız var mı? (Varsa belirtiniz.)	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
19. Tipik bir günde kaç porsiyon meyve yersiniz? (1 Porsiyon: 2 Mandalin, 2 kivi, 2 erik, 1 elma, 1 muz, 1 portakal veya 1 armut)	1'den az <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 3'den fazla <input type="checkbox"/>
20. Tipik bir günde kaç porsiyon sebze yersiniz?	1'den az <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 3'den fazla <input type="checkbox"/>

Aşağıdaki sorulara size uygun olan seçeneği işaretleyin.	Hiç	Ayda 1'den az	Ayda 1-3 kez	Haftada 1 kez	Haftada 2-3 kez	Haftada 3-7 kez	Haftada 7'den fazla
21. Ne sıklıkla yumurta tüketirsiniz?							
22. Ne sıklıkla dana eti tüketirsiniz?							
23. Ne sıklıkla dana eti dışında kırmızı et (kuzu, koyun, keçi) tüketirsiniz?							
24. Ne sıklıkla beyaz et (hindi, tavuk) tüketirsiniz?							
25. Ne sıklıkla balık tüketirsiniz?							
26. Ne sıklıkla baklagil (nohut, kuru fasulye,							

mercimek) tüketirsiniz?							
27. Tipik bir günde kaç porsiyon süt ürünü tüketirsiniz? (1 porsiyon: 1 bardak süt, ¾ kase yoğurt, bir bardak ayran, 1 kibrit kutusu peynir)	1'den az <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	3'den fazla <input type="checkbox"/>		
28. Bir haftada kaç kez makarna, erişte, bulgur veya pilav türü yiyecekler tüketirsiniz?	1'den az <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	3'den fazla <input type="checkbox"/>		
29. Tipik bir günde kaç kez tatlı ve şeker eklenmiş gıda tüketirsiniz?	Hiç <input type="checkbox"/>	1'den az <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	3'den fazla <input type="checkbox"/>	
30. Haftada kaç kez fast food tüketirsiniz?	Hiç <input type="checkbox"/>	1'den az <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	3'den fazla <input type="checkbox"/>	
31. Haftada kaç kez gazlı içecek (Cola, Fanta, Sprite, Soda) tüketirsiniz?	Hiç <input type="checkbox"/>	1'den az <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	3'den fazla <input type="checkbox"/>	
32. Evde yemek yaparken zeytinyağı kullanır mısınız?	Asla <input type="checkbox"/>	Nadiren <input type="checkbox"/>	Bazen <input type="checkbox"/>	Genellikle <input type="checkbox"/>	Her zaman <input type="checkbox"/>		
33. Yemeği tatmadan hangi sıklıkla tuz eklersiniz?	Asla <input type="checkbox"/>	Nadiren <input type="checkbox"/>	Bazen <input type="checkbox"/>	Genellikle <input type="checkbox"/>	Her zaman <input type="checkbox"/>		
34. Bel çevreniz nedir?						
35. Boyunuz nedir?						
36. Kilonuz nedir?						
37. Vücudunuzu nasıl tarif edersiniz?	Zayıf <input type="checkbox"/>	Hafif Kilolu <input type="checkbox"/>	Kilolu <input type="checkbox"/>	Obez <input type="checkbox"/>			
38. Hiç diyetisyene başvurduunuz mu?	Evet <input type="checkbox"/>	Hayır <input type="checkbox"/>					
39. Vitamin ve mineral olmayan bitkisel takviyeleri ilk kez denerken onlar hakkında bilgi edinir misiniz?	Asla <input type="checkbox"/>	Nadiren <input type="checkbox"/>	Bazen <input type="checkbox"/>	Genellikle <input type="checkbox"/>	Her zaman <input type="checkbox"/>		
40. Medyada (örneğin; Radyo, TV, İnternet) yayımlanan doğru beslenme ile ilgili programları	Asla <input type="checkbox"/>	Nadiren <input type="checkbox"/>	Bazen <input type="checkbox"/>	Genellikle <input type="checkbox"/>			

takip eder misiniz?	Her zaman <input type="checkbox"/>
41. Bu programlarda öğrendiklerinizi günlük hayatta uygular mısınız?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
42. Bu programlarda öğrendiklerinizi dost ve akrabalarınıza tavsiye eder misiniz?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> <input type="checkbox"/> Her zaman <input type="checkbox"/>

3. ÜRÜN ETİKETİ OKUMAYLA İLGİLİ SORULAR

43. Satın alacağınız ürünlerin üzerindeki etiketleri okur musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/> Bazen <input type="checkbox"/>
44. Ne sıklıkta okursunuz?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
45. İlk olarak ürünün nesine bakarsınız?	Markasına <input type="checkbox"/> Etiketine <input type="checkbox"/> Fiyatına <input type="checkbox"/>
46. Etiket üzerindeki yazılar sizce yeterince büyük müdür?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
47. Etiket üzerindeki teknik bilgileri tam olarak anlayabiliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/> Kısmen <input type="checkbox"/>
48. “TSE” nin Türk Standartları Enstitüsü’nün mührü olduğunu biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
49. “CE” nin Avrupa Birliği Standartları’nın mührü olduğunu biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
50. Etiket üzerinde en çok hangi bileşenlerin miktarına bakarsınız?	Tuz <input type="checkbox"/> Şeker <input type="checkbox"/> Yağ <input type="checkbox"/> Karbonhidrat <input type="checkbox"/> Kalori <input type="checkbox"/> Koruyucu <input type="checkbox"/> Katkı Maddesi <input type="checkbox"/> Asit <input type="checkbox"/>
51. Yumurtaların üzerine vurulan tarih ve yetiştirilme kodlarına bakar mısınız?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
52. Etiketdeki bilgilerin daha basit olmasını ister misiniz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
53. Günlük ihtiyacı karşılama miktarı yazılmalı mı?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
54. Paket üzerine enerji ve besin değeri	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>

yazılmalı mı?	
55. Ürünün içindeki sakıncalı maddeler yazılmalı mı?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
56. Ürünlerin son kullanma tarihlerine dikkat eder misiniz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/> Bazen <input type="checkbox"/>
57. En çok hangi ürünlerin son kullanma tarihlerine bakarsınız?	Süt ürünleri <input type="checkbox"/> İşlenmiş et ürünleri <input type="checkbox"/> Konserveler <input type="checkbox"/> Dondurulmuş ürünler <input type="checkbox"/>
58. Devamlı satın aldığınız bir markanın ürün etiketine bakar mısınız?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
59. "NBS"nin "Nişasta Bazlı Şeker" i ifade ettiğini biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
60. "GDO"nun "Genetiği Değiştirilmiş Organizma" yı ifade ettiğini biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
61. Ürünlerin üzerindeki saklama koşullarını okuyor ve uyguluyor musunuz?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
62. Ürün etiketini okumaya gerek olmadığını düşünüyorsanız, gerekçeniz ne olabilir?	Genelde bilinen marka aldığımız için <input type="checkbox"/> Bilgiler gerçeği yansıtmadığı için <input type="checkbox"/> Yazıları anlamadığımız için <input type="checkbox"/> Yazılar çok küçük olduğu için <input type="checkbox"/> Diğer: <input type="checkbox"/>
63. Yabancı ürünlerdeki "low fat" veya "fat free" kelimelerinin anlamını biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
64. İçecekler üzerindeki "light" veya "sugar free" kelimelerinin anlamını biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>
65. Kafeinli içecekler sağlığa zararlı mıdır?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/> Bilmiyorum <input type="checkbox"/>
66. Sağlık Bakanlığı vitamin ve mineral takviyeleri için üretim standartları getirmekte midir?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/> Bilmiyorum <input type="checkbox"/>

67. Vitamin ve mineral takviyeleri alıyor musunuz?	Asla <input type="checkbox"/> Nadiren <input type="checkbox"/> Bazen <input type="checkbox"/> Genellikle <input type="checkbox"/> Her zaman <input type="checkbox"/>
68. Temizlik maddelerini aynı kaptaki karıştırmanın tehlikeli olduğunu biliyor musunuz?	Evet <input type="checkbox"/> Hayır <input type="checkbox"/>



Appendix B. RESUME

Kişisel Bilgiler

Adı	SİBEL	Soyadı	SOYLAR
Doğum Yeri	MANİSA	Doğum Tarihi	25.11.1986
Uyruğu	T.C	TC Kimlik No	57475242848
E-mail	manterrad@gmail.com	Tel	5072339043

Öğrenim Durumu

Derece	Alan	Mezun Olduğu Kurumun Adı	Mezuniyet Yılı
Yüksek Lisans	BESLENME VE DİYETETİK	YEDİTEPE ÜNİVERSİTESİ	2019
Lisans	BİYOLOJİ	CELAL BAYAR ÜNİVERSİTESİ	2014
Lisans	RADYOLOJİ	GAZİ ÜNİVERSİTESİ	2006
Lise	RADYOLOJİ	Selman Işılak Sağlık Meslek Lisesi	2004

Bildiği Yabancı Dilleri	Yabancı Dil Sınav Notu (#)

Başarılmış birden fazla sınav varsa(KPDS, ÜDS, TOEFL; EELTS vs), tüm sonuçlar yazılmalıdır

İş Deneyimi (Sondan geçmişe doğru sıralayın)

Görevi	Kurum	Süre (Yıl - Yıl)
MANİSA SARIGÖL DEVLET HASTANESİ	SAĞLIK BAKANLIĞI	20016-2018
MANİSA MERKEZ EFENDİ DEVLET HASTANESİ	SAĞLIK BAKANLIĞI	2011-2016

Bilgisayar Bilgisi

Program	Kullanma becerisi
WORD,EXCEL,POWER POINT	iyi

*Çok iyi, iyi, orta, zayıf olarak değerlendirin

Bilimsel Çalışmaları

SCI, SSCI, AHCI indekslerine giren dergilerde yayınlanan makaleler

Diğer dergilerde yayınlanan makaleler

Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında (*Proceedings*) basılan bildiriler

Hakemli konferans/sempozyumların bildiri kitaplarında yer alan yayınlar

Diğer (Görev Aldığı Projeler/Sertifikaları/Ödülleri)
