

An evaluation of food label reading habits of individuals working in hospitals

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Summary. *Aim:* The aim of this study is to determine food label reading habits of individuals working in hospitals, and raise awareness about food label reading with the help of a data collection form prepared based on the topic. *Material/Methods:* The research was carried out with 336 people (76 males, 260 females) between the ages of 19-60 working in various hospitals in Ankara city. *Results:* In this work, we found that the mean age of participant was 32.85 ± 8.34 years old and BMI was 23.37 ± 4.02 kg/m². 53.9% of the individuals stated that the most influential factor to purchase a packaged food product was their own preference. It was determined that 44.6% of the individuals always read the label of a packaged food product. 36.9% stated that this information was always effective in purchasing, and 57.1% reported the information was occasionally influential. *Conclusion:* Food labels can help promote the awareness of consumers about nutrition, and access right information.

Key words: consumer, food label, healthy diet

Introduction

A label is a material which contains information identifying a product and helps transfer this information to consumers in a comprehensible and practical way during the purchase of the product (1). The overall purposes of labeling can be listed as follows: health; providing adequate and accurate information regarding safety and economic concerns; preventing consumers and producers from false and misleading packages and advertisements; and supporting fair competition and product marketability (2). Food labels make up one of the important parts of food safety as they provide consumers with accurate information about products, protect them from inaccurate information, and help them make informed choices (3). In addition, the adequacy of the information supplied on the label of the package and consumer's perception of the label content is important for food safety (4).

Food labels make a good contribution to consumer education on nutrition and help consumers know the facts. Food labels also have an effect on helping consumers to choose the most nutritious and healthy food during their dietary practices (celiac, diabetes, and food allergies, etc.) and purchasing, as well as ensuring an adequate and balanced diet (5). Some studies show that consumers care about the information on food labels (6-8). The most frequently reading information on labels was determined to be production date and/or expiry date (6, 8-11). The reasons why consumers read food labels can be listed as follows: socio-demographic characteristics (7, 10, 12-14); having difficulty understanding the terminology/statement/value/nutrient values on the label; badly-organized information on the label; and concerns about the accuracy of the information on the label.

Reading food labels and comprehension of the label content affect individuals' food preference attitudes.

With better comprehension of labels, health professionals can make use of them as a nutrition education tool, and therefore this can help increase the efficiency in label use (15). The aim of this study is to determine food label reading habits of individuals working in hospitals, and raise awareness about food label reading with the help of a data collection form prepared based on the topic.

Materials and Methods

Purpose and model

The research was carried out as a descriptive study to determine food label reading habits of individuals working in hospitals, which are one of the important elements of food safety, and raise awareness about the topic.

The universe and sampling of the study

The universe of the study consisted of individuals working in various hospitals located in socio-economically different districts of Ankara. The sampling of the study was determined by simple random sampling method, was made up of 336 individuals (76 males and 260 females) working in a hospital and accepted to participate in the study. The reason why hospital employees were selected was because they constituted the group who are sensitive to nutrition issues, health and diseases, cases that can affect the health positively / negatively.

Data collection tool and method

The data of the study were collected through face-to-face interviews between March and May 2015 using a data collection form developed by the researchers. The form consisted of questions about general information (13 items), label content of packaged products (10 items), and details considered when purchasing packaged products (13 items).

Ethical considerations

Permission for the study was obtained from the Ethics Committee of Ankara University (85434274-050.04.04/54500/1279) and from the institutions where the study was carried out. Written consents of the individuals were obtained after they were informed about the purpose of the study.

Analysis of the data

The research data were presented as absolute and percentage (%) values in tables. Arithmetic means and standard deviation values ($X \pm S$) were calculated where needed. Chi-Square Significance Test (X^2) was administered in the analysis. Gender, age groups, and education status were used as variables.

Results

22.6% of the participants were males, and 77.4% were females. Mean age was 32.85 ± 8.34 years. 17.3% of the participants were high school and 82.7% were university graduates. As for the professions, 59.8% were midwives – nurses, 16.4% doctors, 16.7% other workers, and 7.1% other health care workers (Table 1).

When the participants were asked whether they were interested in food label facts, the response of the majority was 'yes' (64.8%), whereas 28.0% responded "sometimes". These findings were significant in terms of gender ($p < .05$). Regarding the places where the participants purchased food, they were found to be supermarkets and hypermarkets with 56.8% and

Table 1. Sociodemographic characteristics

| Age group (year) | n | % |
|--------------------------|-----|------|
| 19-24 | 49 | 14.6 |
| 25-34 | 155 | 46.1 |
| ≥35 | 132 | 39.3 |
| Gender | | |
| Male | 76 | 22.6 |
| Female | 260 | 77.4 |
| Marital status | | |
| Married | 171 | 50.9 |
| Single | 165 | 49.1 |
| Education status | | |
| High school | 58 | 17.3 |
| University | 278 | 82.7 |
| Profession | | |
| Midwife – Nurse | 201 | 59.8 |
| Doctor | 55 | 16.4 |
| Other worker | 56 | 16.7 |
| Other health care worker | 24 | 7.1 |

17.0% respectively. 19.9% stated it did not matter where they went shopping. On the other hand, the individuals mentioned the following cases as factors affecting packaged food purchase: their own preference (53.9%); family preference (23.2%); economic condition of the family (9.5%); price (7.1%); and friend advice (6.3%).

The rate of participants who always read and sometimes read the label of packaged food was 44.6% and 50.6% respectively. This was found to be significant in terms of gender ($p < .05$). 36.9% said that this information was always effective in purchasing, whereas 57.1% stated it was sometimes effective.

When the question regarding which description method was instrumental in better understanding the label content was analyzed in terms of gender, both genders were found to prefer written statement most with 55.3% (Males) and 49.6% (Females). Regarding the same analysis, the following results were found in terms of age groups: 19-24 age group preferred numeral statement most with 36.7%; 25-34 age group figural statement with 28.4%; and 35 and over age group written statement with 55.9%. When the same question was analyzed in terms of education level, it was determined that the participants with university and higher education level found figural statement

Table 2. Gender-based frequency of food label reading and its effects on food purchasing decision

| | Males | | Females | | Total | |
|---|-------|------|-------------|------|------------|------|
| | n | % | n | % | n | % |
| Frequency of food label reading | | | | | | |
| Always | 32 | 21.3 | 118 | 78.7 | 150 | 44.6 |
| Sometimes | 36 | 21.2 | 134 | 78.8 | 170 | 50.6 |
| Never | 8 | 50.0 | 8 | 50.0 | 16 | 4.8 |
| | | | $X^2=7.197$ | | $p < 0.05$ | |
| Effects of label content on food purchasing decision | | | | | | |
| Always | 25 | 20.2 | 99 | 79.8 | 124 | 36.9 |
| Sometimes | 43 | 22.4 | 149 | 77.6 | 192 | 57.1 |
| Never | 8 | 40.0 | 12 | 60.0 | 20 | 6.0 |
| | | | $X^2=3.885$ | | $p > 0.05$ | |

Table 3. Description types of food label content in terms of gender, age, and education status

| | Written | | Numeral | | Figural | |
|-------------------------|---------|------|-------------|------|-----------|------|
| | n | % | n | % | n | % |
| Gender | | | | | | |
| Males | 42 | 55.3 | 16 | 21.1 | 18 | 23.6 |
| Females | 129 | 49.6 | 59 | 22.7 | 72 | 27.7 |
| Age group (year) | | | | | | |
| 19-24 | 19 | 38.8 | 18 | 36.7 | 12 | 24.5 |
| 25-34 | 79 | 1.0 | 32 | 20.6 | 44 | 28.4 |
| ≥35 | 73 | 55.3 | 25 | 18.9 | 34 | 25.8 |
| Education status | | | | | | |
| High school | 37 | 21.6 | 13 | 17.3 | 8 | 8.9 |
| University | 134 | 78.4 | 62 | 82.7 | 82 | 91.1 |
| | | | $X^2=6.710$ | | $p < .05$ | |

more comprehensive with 91.1%, and that those with high school level found written statement more comprehensive with 21.6%. This state was found to be statistically significant in terms of education level ($p < .05$).

The top three factors being influential in both groups on food label reading in terms of gender were as follows: the consideration that it protects child/family health (Males: M: 27.6%, Females: F: 35.4%); the idea that it generally contributes to healthy eating (M: 25.0%, F: 28.5%); and the thought that it is effective in achieving weight control (M: 19.7%, F: 14.2%).

When the same question is analyzed based on age groups, the following results were found: 19-24 age groups mentioned dietary practices most, when compared to other age groups (36.4%); 25-34 age groups stated comparing two products most (63.3%); and 35 and over age group responded protecting child/family health (50.4%) ($p < .05$). When the groups were compared in terms of education level, the most influential factor in university graduates group was comparing the content of two products with 96.7%, whereas it was dietary practices in high school graduates with 27.3% ($p < .05$).

The rate of the individuals who found the information on food labels useful was 81.0%, the rate of those who considered it useless was 9.8%, and it was 9.2% for those who did not have any idea. 70.2% of the individuals who thought the food label content was useful (272 people) stated this benefit helped to

be a conscious consumer, 22.4% said it affected the health positively, 5.9% reported it contributed to meet a part of their daily needs, and 1.5% stated it provided various recipes ($p < 0.05$). The individuals who thought it was useless (33 people) stated their reasons as follows: inconsistency of the information on the label with the net amount of the product (33.3%); the use of quite small font size (33.3%); difficulty finding the production and expiry dates (18.2%); difficulty understanding the language of the label (6.1%); dimmed label words (6.1%); and lack of product price (3.0%) ($p > 0.05$).

Table 5 presents the responses to the question how often the participants paid attention to the information on the label when they purchased packaged food. Accordingly, the rates of top three information types always read on the label were statements 1 (89.9%), 2 (81.5%) and 3 (70.2%). On the other hand, the rates of top three information types sometimes read were statements 5 (45.5%), 8 (44.3%), and 11 (42.9%). The top three rates for those who never cared for label information were determined to be statements 10 (42.0%), 9 (39.3%) and 12 (32.4%).

Discussion

An adequate and balanced diet is one of the basic requirements for people to maintain a healthy life.

Table 4. The Usefulness of Food Label Content and the Distribution of Positive Responses by Gender

| | Male | | Female | | Total | |
|--|------|------|--------|------|-------------|------------|
| | n | % | n | % | n | % |
| The Usefulness of Food Label Content | | | | | | |
| Yes | 12 | 36.4 | 21 | 63.6 | 33 | 9.8 |
| No | 54 | 19.9 | 218 | 80.1 | 272 | 81.0 |
| No idea | 10 | 32.3 | 21 | 67.7 | 31 | 9.2 |
| | | | | | $X^2=6.396$ | $p < 0.05$ |
| Thoughts of those who responded 'yes' (n=272) | | | | | | |
| Affecting the health positively | 20 | 32.8 | 41 | 67.2 | 61 | 22.4 |
| Ensuring to be a conscious consumer | 31 | 16.2 | 160 | 83.8 | 191 | 70.2 |
| Contributing to meet daily needs | 2 | 12.5 | 14 | 87.5 | 16 | 5.9 |
| Teaches various recipes | 1 | 25.0 | 3 | 75.0 | 4 | 1.5 |
| | | | | | $X^2=8.599$ | $p < 0.05$ |

Consumption of packaged food and presentation of food labels with accurate, comprehensive and satisfactory content is of great significance in healthy eating. In this study, carried out to determine hospital employees' food label reading attitude which is one of the important parts of food safety, and raise awareness, majority of the participants were females and university graduates, and more than half were midwives-nurses.

Nutritional labeling has emerged as an important aspect of consumers' food purchase decisions. A large part of the participants stated that they were interested in the label information of the food they purchased. Some studies also found findings similar to those of our study (6, 8, 16-18).

Interest in label information was found to be significant in terms of gender (females) ($p < .05$). Similarly, studies show that women read label information more than men (10, 14, 15, 18, 19). In line with these results, it can be said that gender is a significant variable in label reading attitudes. More than half of the participants generally buy food from supermarkets. Önce and Marangoz (2002) determined that consumers preferred supermarkets or hypermarkets for shopping (20). The results are in line with the findings of other studies (2, 21-23).

More than half of the individuals stated that the most influential factor on buying packaged food was their own preference, and that it was family preference, financial status of the family, price and friend advice with a lower rate. Çete (1989) determined that nutritional value, suitability of family members' health condition, and cost were important determining factors in choosing a given food type (24). Güler and Özçelik (2002) found the factors affecting working women's food purchasing attitudes as suitability of the food for family members' health conditions, expiry date, nutritional properties, price and budget-friendliness, preferences of women, preferences of all family members, preferences of the spouse, and preferences of the children (25).

Percentage of participants stated that they sometimes read food labels was 50.6%. Aygen (2012) determined in a study investigating the frequency of packaged food label reading that 53.0% of the participants "always" or "most of the time", nearly 40% "sometimes", and almost 10% "rarely" read food labels.

It is necessary to increase the effective use of food label information in helping individuals choose the right food for healthy eating. Food labels should have a usable and comprehensive content (26). Therefore, the way a la-

Table 5. Properties considered when purchasing packaged food

| Statements | Always | | Sometimes | | Never | |
|--|--------|------|-----------|------|-------|------|
| | n | % | n | % | n | % |
| 1. Production and expiry dates | 299 | 89.9 | 27 | 8.0 | 10 | 3.0 |
| 2. Brand name of the packaged food | 274 | 81.5 | 55 | 16.4 | 7 | 2.1 |
| 3. Price of the packaged food | 236 | 70.2 | 85 | 25.3 | 15 | 4.5 |
| 4. Having not used the product before | 232 | 69.0 | 77 | 22.9 | 27 | 8.1 |
| 5. Nutrients of the packaged food | 153 | 45.5 | 153 | 45.5 | 30 | 9.0 |
| 6. Additives in the food | 154 | 45.8 | 139 | 41.1 | 43 | 13.1 |
| 7. The preparation and storage conditions | 155 | 46.1 | 126 | 37.5 | 55 | 16.4 |
| 8. Whether the package is recycleable | 62 | 18.5 | 149 | 44.3 | 125 | 7.2 |
| 9. Whether it has a standard (TSE ISO 9000) | 129 | 38.4 | 75 | 22.3 | 132 | 39.3 |
| 10. The color of the package | 76 | 22.6 | 119 | 35.4 | 141 | 42.0 |
| 11. Whether it is organic | 126 | 37.5 | 144 | 42.9 | 66 | 19.6 |
| 12. The name and address of the manufacturer | 101 | 30.1 | 126 | 37.5 | 109 | 32. |
| 13. Whether the food is genetically modified | 115 | 34.2 | 129 | 38.4 | 92 | 27.4 |

(TSE ISO 9000: Turkish Standards Institution International Organization for standardization 9000)

bel is presented is important. The presentation methods of label content can vary by some characteristics of individuals such as gender, age group, and education level. It was determined in some studies that as the level of education increased, the use of labels increased as well (18, 27).

When the case is discussed in terms of food safety, the adequacy of label information on a package and the level of consumer perception stands out (4). In the event of better comprehension of labels, food labels will be used in nutrition education and its importance will increase further (15). Gracia, Loureiro and Nayga (2007) determined that some consumers who experienced health problems had more information about food labels (28). Aschemann-Witzel et al. (2013) found that label information had an influence on helping consumers make healthy food choices and increased perceptive skills (29). Fulgoni and Miller (2006) determined that providing the family with healthier food and desire to lose weight were among consumers' reasons for reading food labels (30).

The information on food labels that isn't described in a plain language can cause consumers to experience difficulty reading and understanding food labels. Güneş, Aktaç and Korkmaz (2014) stated in their study relating to this issue that consumers wanted the information on food labels to be simpler (18). Additionally, Carrillo et al. (2012) found that food labels were not understood due to technical terminology (31). Besler et al. (2012) determined that inadequate terminology/statement/value/nutrient values on the label, badly-organized label information and unknown terms on labels caused consumers to fail to read labels (15). In another study, the reasons for not reading food labels were determined to stem from confusing label content, wasting time while reading, and difficulty following food information and instructions (32). According to Güneş, Aktaç and Korkmaz (2014), small font size and incomprehensive information were among reasons for not reading food information (18).

Some of the most important information on food labels is production and expiry dates, storage conditions, nutrient content, nutritional value, and net amount. However, low consumer sensitivity to food label content can cause various difficulties reading food labels such as unsatisfactory information about the food by the manufacturer, small font size, including information on labels and package more than necessary and wrong choice of package colors.

It was determined in a study that 78.2% of the individuals always checked the production and expiry dates of a product they purchased (4). On the other hand, the study by Özgen (2004) found that 76.9% of the consumers always read the production date, 78.4% expiry date, and 49.4% shelf life of the products they purchased (11). However, 72.7% were determined to sometimes read nutritional content. Sloan (2003) reported that 90% of the consumers with label reading habit always paid attention to the production and expiry dates of products they purchased (33). Another study concluded that 83.3% of the consumers always paid attention to expiry date, 79.7% to production date, 64.6% to the name and type of the product, and 60.6% to the price (8). Our results are in line with the above mentioned results.

Today, rapidly developing technology is also used in food industry. The importance of food packaging has even increased due to the fact that consumers want to assess such information as market availability of particularly genetically modified food without satisfactory history, whether products contain additives or not, and whether the product is organic. In this study, the participants "always" or "sometimes" paid attention to whether the food package recyclable (62.8%), whether the product is organic (72.6%), and whether the product contains any genetically modified food. Therefore, if manufacturers also include information regarding these statements on food labels as well as other details that consumers consider and use an internationally recognized standard logo it would be effective in helping consumers to buy food safely and in a more informed way.

Conclusion

The aim of this study is to determine food label reading habits of individuals working in hospitals. It was determined that 44.6% of the individuals always read the label of a packaged food product. 36.9% stated that this information was always effective in purchasing, and 57.1% reported the information was occasionally influential. Food labels can help to increase consumer awareness about eating and access accurate information. They are an educational tool that allows consumers to compare nutritional values of products in different brands or different foods. Consumers should

learn label literacy so that they can obtain necessary information about both their own health and the product they have purchased. Businesses dealing with food production with taking consumer demands into consideration, should provide the consumers with accurate and comprehensive information about nutrition which will help them maintain healthy eating habits and make conscious eating choices. In addition, the manufacturers should also raise awareness about the importance of labeling.

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