

## Conference Paper

# Food Label Use and Awareness of Nutritional Information Among Consumers in Bahrain: An Exploratory Study

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**Abstract**

Nutritional labeling provides consumers with the information that can be used to make informed and healthier food choices. It is particularly useful for people who are on special diets to select suitable foods for their health conditions. Considering the significant role of consumers' awareness about food labels in making healthy food choices, 430 consumers (60% were female) were interviewed while shopping at various grocery stores in the Kingdom of Bahrain to assess their knowledge, attitudes and practices using a questionnaire. Consumer's responses showed little awareness for reading the food label. Although, 65% of the consumers buy prepackaged food, only 42% read the food label. The majority of the consumers (92%) read the basic information like production and expiry dates; 60% believed that food labels are useful tools for consumers. In addition, they reported that amount of fat and sugar were the most important items to be looked at when they buy the product for the first time. In summary, this study was important to enlighten consumers about the importance of reading the food labels. In addition, it also has an educative health and nutrition implications to help consumers make an informed choice when buying pre-packaged foods. A lot of work is needed to raise the level of awareness of the consumers about the nutrition aspects of reading food labels in order to assist them to make their best healthy food choices.

**Keywords:** Food Labels, Pre-packaged Foods, Awareness, Nutrition, Health

## 1. Introduction

Food labels are found to be a very important public health tool that is used to promote a balanced diet [1]. Food labels information assists consumers to better understand the nutritional value of food and enables them to compare the nutritional values of similar food products and to make healthy informed food choices based on the relevant

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nutrition information [2]. As consumers are becoming more aware of the relationship between diet and disease; their demand for nutrition information increases [3]. Consequently food label is very useful for people who are on special diets (e.g. people suffering from diabetes or high blood lipid) to select suitable foods for their health conditions.

There are many important diet related -public health problems and diseases such as poor nutrition; obesity high blood pressure; cancers, diabetes; osteoporosis and cardiovascular diseases [3]. The World Health Organization (WHO) reported that dietary factors accounted for approximately 30% of cancers in industrialized countries [4].

Consumers perceive themselves as knowledgeable regarding food label use. The most frequently parts of the label read were the calorie; fat; sugar; sodium and fiber contents. They also use serving size; ingredient list; the % daily values; health and nutrient claims; price; and brands when making their food purchasing decisions [5-6]. Many consumers feel confident that they understand how to read labels and prefer using a food label than relying on their own knowledge [7].

Assessing the consumer's nutrition knowledge level about dietary sugars, fats and cholesterol and their attitudes towards selecting healthier food is important. Review of consumer research studies of food labeling focused on whether consumer read and understand food labels or use them when buying pre-packaged food [8-9]. It has also been reported that consumers' knowledge and attitudes were positively correlated with their educational level. Those with higher education are usually more receptive to nutrition and health education [3, 10-11]. Some studies have indicated that food label use decreases with age [12]; however, some other researchers have demonstrated the reverse [13]. Evidence suggests that males are less likely to use nutritional labels than females [3, 14].

In addition to demographic factors, nutritional knowledge plays a key role in the food label use. Previous studies have reported a positive relationship between knowledge and label use [15], however Nayga et al., [12] found no evidence supporting this relationship.

There were few attempts to address the consumer's awareness of nutritional aspects of food labeling use in the region. It was evident that even though consumers were aware of the importance of reading food labels; they regarded information on manufacturing date; expiry date and content of the package as the most important information on labels [16]. This might be attributed to the fact that most of the foods manufactured or repackaged in the region have labels lacking many of the nutrition

information required by the American standards such as nutrition facts; serving size; special characteristics; health claims; special usage and health warnings [17].

Considering the significant role of consumers' awareness about food labels in making healthy food choices, it was therefore important to enlighten Kingdom of Bahrain consumers about the importance of reading the food labels. Therefore this study has aimed to assess consumer knowledge, attitudes and practices on food labels in the Kingdom of Bahrain. No similar study was previously conducted in the kingdom; this study will provide new data related to the use of food labels by consumers in the Kingdom which are necessary to put them in public health recommendations and health educational programs to improve consumers' behaviors towards better use of the information on the food label for better nutritional status of Kingdom of Bahrain consumers.

## 2. Methods and Materials

This descriptive cross-sectional study has assessed Kingdom of Bahrain consumers' knowledge; attitudes and practices towards food labeling. This study was conducted in randomly selected Food Market Centers (Al-Jazeera supermarket, Lulu Hypermarket, Mega Mart, Carrefour) during January to May 2017.

## 3. Sample Size and Selection

Convenient sampling was used to recruit participants into the study. Data was collected from 430 subjects who agreed to be interviewed in the Food Market Centers using a questionnaire by trained students enrolled in nutrition course. Data were collected through a structured questionnaire developed based on questionnaires used reliably in previous studies [3, 17]. The questionnaire contained 8 sections; Demographic characteristics, consumer knowledge, attitudes and practices on food labels, item on food label and the level of importance to the consumer and finally consumers' health concerns for not reading food label. The questionnaire was pilot tested for face validity and minor modification was made accordingly. Since Food labels require nutritional knowledge to understand, after the interview, the students explained the consumers how to read food labels.

Questionnaires were completed in the presence of the students who provided assistance when needed. The collected data was consolidated, tabulated and analyzed statically. Data were analyzed using SPSS Inc.; version 20.0; Chicago; IL. Descriptive

statistics analysis was used to calculate Frequency and Percentage. T test was applied to determine the awareness regarding food label between consumers of different Nationality. Chi-square test was performed as appropriate to assess if there were statistically significant differences between the Demographic characteristics with regard to label use. Statistical significance was set at 0.05.

## 4. Results and Discussion

The present study was carried out to study the awareness of consumers regarding food label. Information about food label such as expiry date, storage condition, brand name, price and nutrition facts label were collected using structured questionnaire. Awareness of the selected consumers about nutrient content written on food label and their health concern were also studied.

The collected data on general information of the selected consumers is given in Table 1. The majority of respondents were female (60 %), a total of 60.2 % were university graduates reflecting higher educational level among Food Market Centers shoppers interviewed. The largest percentage of respondents were Bahrainis (74.7%). In regard to health conditions, 29% of the respondents were diabetic.

TABLE 1: Demographic characteristics of the sample (n=430).

Variable	Frequency	Percent
<b>Gender</b>		
· Male	173	40
· Female	258	60
<b>Education</b>		
· University	259	60.2
· School (High/middle)	118	27.4
· No education	53	12.3
<b>Nationality</b>		
· Bahraini	321	74.7
· Non Bahraini	109	25.3
<b>Health Condition (Diabetes)</b>		
· Diabetic	125	29
· Non-diabetic	306	71

When consumers interviewed were asked if they buy prepackaged food and read the food label; 65% stated that they buy prepackaged foods. About 42 % stated that they read the food label (Figure 1); that could be due to low level of nutritional knowledge among consumers in the Kingdom. However the percentage of those who

read food label was higher in studies conducted in other countries [3, 18, 19, and 20]. Furthermore, 71% of the respondents believed that Food label have an effect on nutritional awareness.

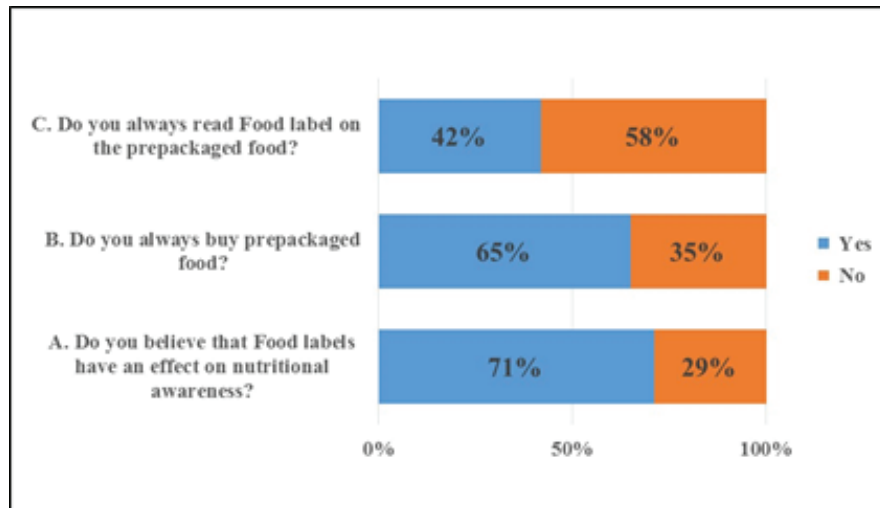


Figure 1: Consumer’s Knowledge regarding food labels.

The analysis of consumers’ attitude towards information on food labels were shown in Figure 2. Around 65 % of the respondents believed that food labels are useful tools for consumers. 42% of the respondents declared that they have no opinion about the accuracy of the nutrient information that is provided in the food label. We think this result is due to inadequate awareness on use of food labeling information in the Kingdom. However, 55% believed that food label is easy to understand and 51% found that nutrition warnings on food label are truthful.

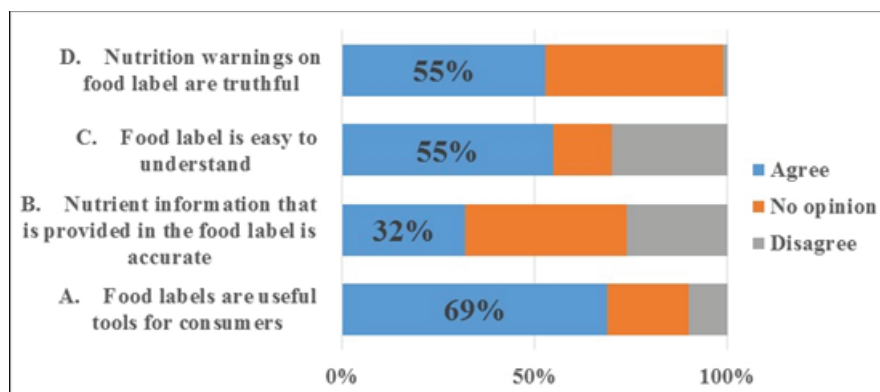
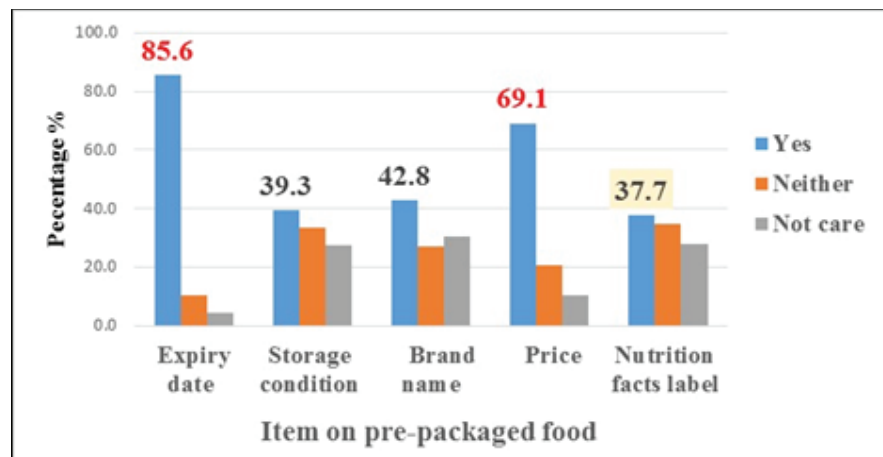


Figure 2: Consumer’s attitude regarding food labels.

There are many food items which might relatively be available in the food label and the consumers may be looking at when buying the food packages. 5 items only were identified and interviewees were asked to identify which food item they were looking at on the food label more (Figure 3). The analysis showed that the majority

of the consumers (85.5%) look to see the information about expiry dates; followed by food price (69%). The percentage of the expiry date in this study is consistent with most of the studies conducted in different countries [3, 18, 19, and 20]. Around 42.7 % look for the brand name of the food product followed by storage conditions of the packaged food (48.5%). Nutrition fact label was found to be the least important (37.6%) among the five identified items. Similar results have been reported by studies from various countries as there were factors related to consumers not reading and using food labelling information in purchasing food.

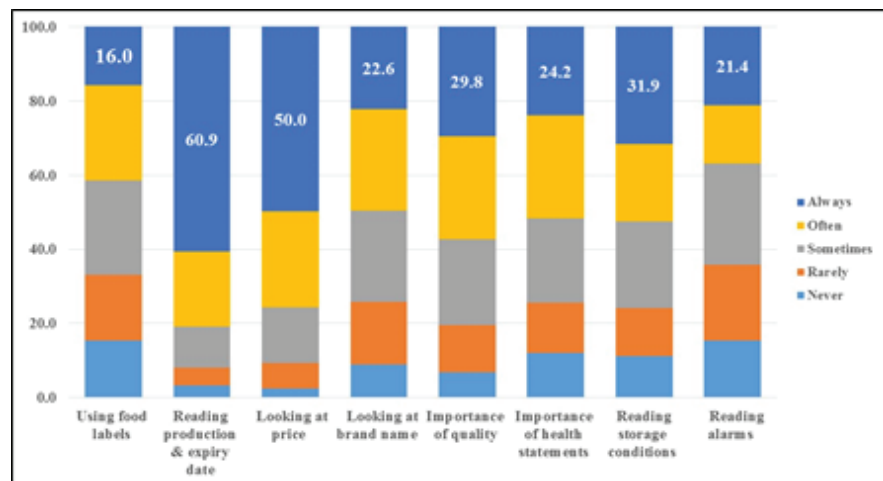
A study conducted in India reported that consumers purchase pre-packaged food without reading labelling information because the food was routine/familiar to them [19]. Another study in Iran found other factors such as: small print on food labels to be the main reason for not reading food labels information, followed by no interest, do not believe and do not understand the food label [18]. In addition, UAE study reported that very low percentage of consumers (9.2%) want to see the nutritive value of food [3].



**Figure 3:** Information that consumers are looking for on the food label.

The analysis of consumers' practice towards information on food labels were shown in Figure 4. Around 60.9 % of the respondents always read production & expiry date followed by food price (50%). This result is consistent with the results shown in Figure 3 and it is in sound with results in other studies [3, 18, 19, and 20]. Almost a similar result were found when the consumers read the storage condition of the food (31.9%) and care about the quality of food (29.8%). In addition, the results of the consumers looking at the brand name (22.6%), reading the importance of health statements (24.2%) and any alarms about forbidden foods or ingredients for certain patients (21.4%) were very close. only 16% of consumers always use food label when purchasing prepackaged food and this can be explained due to factors related to consumers not reading and

using food labelling information in purchasing food. We believe that the main factors have been reported in other studies such as: the food was routine/familiar to them [19], or they do not believe and do not understand the food label [18]. According to Themba & Tanjo (2013), lack of nutrition knowledge, lack of interest, do not believe nutrition information on food products, small print on labels, read nutrition information only when purchasing food items for the first time and time pressures were ranked in order of priority [21].



**Figure 4:** Consumer practice towards information on food label.

Surveying perception of consumers about the importance of reading information on food labels, 48.4% perceived reading food label as very important, and 36.5% respondents perceived it as moderately important. While 15.3% respondents perceived reading food label as not important (Figure 5). A study conducted in India also showed a similar result [19]. However, the results in both studies did not reflect the awareness and use of the information in purchasing pre-packaged foods among consumers in Kingdom of Bahrain.

In this study, the consumers were also asked about the most important nutritional items that they will look at when buying the food for the first time. The result in Figure 6 showed that the three most nutritional items are: the fat content of the food (61.4%), the sugar content of the food (55.8%) and the food total calories (53%). While protein (42.1%), vitamins (40.0%) and minerals (30.2%) in the food were the least important.

Increased diet related diseases in the Kingdom may be related to increased consumption of pre-packaged foods and inadequate awareness on use of food labeling information. Accordingly, the consumers were asked to choose only one health concern that they believe it is related because they don't read the food label. The analysis showed that the majority of the consumers perceive overweight as the most health

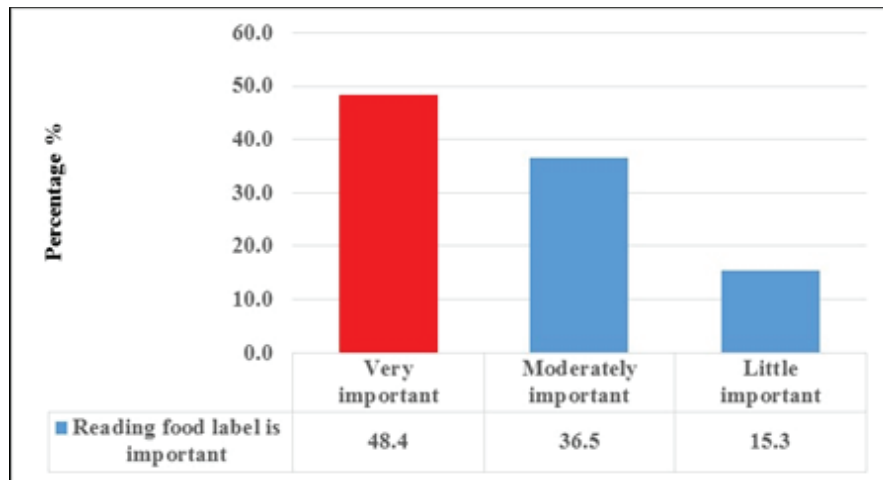


Figure 5: Consumers perception about the importance of reading food labels.

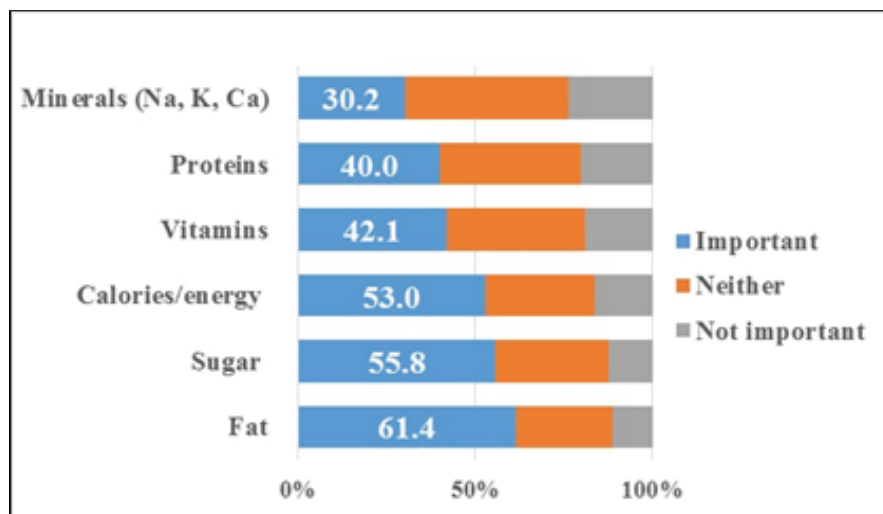
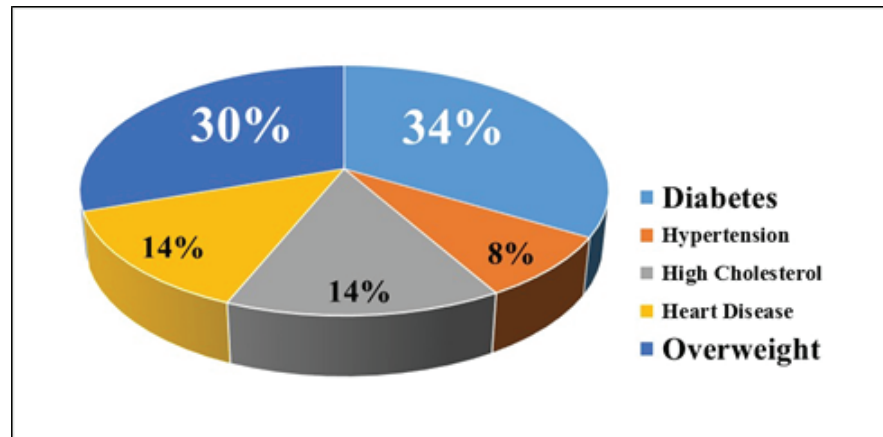


Figure 6: Consumers perception about the most important items in the food label.

concern (34%), followed by diabetes (30%), heart disease and high cholesterol level were perceived similarly (14%). Finally, hypertension was the least concern (8%) of the consumers.

Significant relationships were found between high level of education and knowledge of food labels ( $\chi^2=12.79$ ;  $df=2$ ;  $P=0.002$ ), and their attitudes towards selecting foods based on their nutritive value ( $\chi^2=43.64$ ;  $df=8$ ;  $P=0.000$ ). In addition, significant relationship was found between highly educated consumers and using food labels when purchasing food products compared to others ( $\chi^2=24.26$ ;  $df=8$ ;  $P=0.002$ ). Similar result was found by Washi in UAE in 2012; which showed statistical correlation between the level of education and consumer’s interest in reading and using the food label. Health condition also showed relationship with the attitudes toward selecting healthy foods





**Figure 7:** Consumers perception about most health concern related to not reading food label.

( $\chi^2=44.50$ ;  $df=4$ ;  $P=0.000$ ). More diabetic consumers consider the food label as a useful tool than non-diabetic.

## 5. Conclusion

The study assessed the consumers' knowledge; attitude and practices towards food labeling in the kingdom of Bahrain. We found limited usage and understanding of nutrition labels among consumers. The overall knowledge, attitude and practice of the consumers showed significant correlation only with high level of education in this study. Consumers need to be familiar with the terminology and language on the current nutrition panel, and the need for basic nutrition education and user-friendly label formats. A lot of work is needed to raise the level of awareness of the consumers about the nutrition aspects of the food labeling in order to assist them in bridging the gap between current dietary practices and dietary recommendations which will be useful to make healthier food choices. Health programs and awareness campaign in Food Market centers are also required to educate consumers regarding food labeling and its benefits on preventing lifestyle-related diseases. The study also recommends further studies to get the impact of a wide range of consumers with convenient selection of study sample and equal presentation which will enable studying the impact of all the variables.

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