ATTITUDES AND PRACTICES OF CONSUMERS REGARDING FOOD LABELS

Eldina Smječanin
University of Sarajevo, Faculty of Health Studies, Bosnia and Herzegovina,
eldina.smjecanin@fzs.unsa.ba
Kenan Čaklovica
University of Sarajevo, Faculty of Veterinary Medicine, Bosnia and Herzegovina,
kenan.caklovica@vfs.unsa.ba
Ema Pindžo
University of Sarajevo, Faculty of Health Studies, Bosnia and Herzegovina,
ema.pindzo@fzs.unsa.ba
Amar Žilić
University of Sarajevo, Faculty of Health Studies, Bosnia and Herzegovina,
amar.zilic@fzs.unsa.ba
Zarema Obradović
University of Sarajevo, Faculty of Health Studies, Bosnia and Herzegovina,
zarema.obradovic @fzs.unsa.ba
Neira Fazlović
University of Sarajevo, Faculty of Veterinary Medicine, Bosnia and Herzegovina,
neira.fazlovic@vfs.unsa.ba

Abstract: Food labels are the only objective link between food business operators and consumers and present a crucial public health instrument. Food labels help consumers make better food choices, especially with regard to health, dietary, or other cultural and social issues. However, the frequencies of use and consumer attitudes toward food labels depend on various demographic and socioeconomic characteristics of consumers. This cross-sectional study, which included 400 respondents, was designed to assess the frequency of use and attitudes toward food labels among consumers in Sarajevo Canton as well as to determine barriers that hinder consumer use of food labels. An anonymous survey questionnaire based on previously conducted studies was used as a research instrument. The habit of reading information on food labels depends on the gender of the respondent. Respondents who "always" or "sometimes" read food label information were mostly female (72.4% and 63.1%). The level of education had statistical significance. Respondents with a high level of education used food labels more often than respondents who only had primary or high school education. Information on food label that respondents (81.3%) most often read and give highest priority was the expiration date. The most common reasons for not reading food label information were small lowercase letters and poor legibility of the text (47.3%) and lack of time during shopping (44.0%). Consumer education (56.7%), bigger letters (50.7%), more information for consumers (32.5%), and better legibility (30.3%) were the respondents' suggestions on how to improve the frequency of food label use. Barriers to the use of food labels indicated a need for better harmonization of food labels in terms of legibility, as well as the need to improve the level of nutritional literacy through educational approaches as well as various promotional programs adapted to consumer needs.
Keywords: food labels, consumers, practice, attitude, Sarajevo

1. INTRODUCTION

Food business operators must provide consumers with a product that meets health safety requirements, which includes providing them with clear, consistent, evidence-based information on food labels that will protect their health and interests (Food and Agriculture Organization & World Health Organization, 2001). Food labelling has been recognized as an important public health instrument that aims to inform consumers about the food they are consuming and create a supportive environment that encourages consumers to make healthier choices when shopping for food, establishing their eating habits, and reducing the prevalence of non-communicable diseases connected with food consumption and unhealthy lifestyles (Thow et al., 2020; Branca et al.,2019; Vijaykumar et al., 2013). Food labels should educate and inform consumers to make nutritionally appropriate choices (Wills et al., 2009), however, whether the proper labelling of food, even when adhering to regulations, influence the frequency that consumers read and understand food label information? A range of consumer research studies (Sokolić et al., 2015; Bazhan et al., 2015; Bryła, 2020) has been conducted with the goal of studying the frequency of consumer use and understanding of food label information as well as determining the variables and barriers that influence those

behaviours. Earlier studies indicated that the gender of respondents has a significant impact on the usage frequency of information provided by food labels. Female respondents use information on food labels more often than males (Hong et al., 2014; Viola et al., 2016; Themba&Tanjo, 2013), which was closely related to differences in nutritive knowledge among respondents (Grunert et al., 2010). Nutrition knowledge supports food label use. The more nutrition knowledge consumers have, the more likely they can understand and use food labels to guide them toward making healthy decisions (Ayaz et al., 2015; Miller&Cassady, 2015) (16,17). The level of formal education and socioeconomic status positively correlate with the frequency of reading and understanding food label information, as individuals with higher education were more likely to have a positive attitude and read food labels more often than those with lower education (Monye et al., 2020; Aryee et al., 2019). In relation to age, the frequency of use and understanding of food label information is much higher in younger age respondents than in older respondents, although some research stated that with increasing age accompanied by diet-related chronic conditions, the interest of older consumers in information on food labels increased due to nutritional concerns and the health benefits that can be achieved from food consumption (Vemula et al., 2014).On the other hand, the interest and frequency of food label use among the elderly population could decrease due to difficulties with reading (size of the text), attention, and monthly income, which influence the choice of products (Deakin T, 2011; Miller et al, 2017). Previous studies have found that the frequency of reading and use of food labels is much higher in respondents who are married or live with a partner and among those who have young children (Besler et al., 2012; Gomes et al., 2017). In addition to the effect of demographic and socioeconomic variables on the frequency of use and understanding of food labels among consumers, the effect of frequency of interaction with labels also depends on the shape and type of information provided (Grunert & Wills, 2007). However, barriers to the proper use of food labels often include shortage of time, the difficulty of use, lack of interest, a negative attitude toward food, and lack of trust in food label information (Sokolić et al., 2015; Samson, 2012; Davidović, 2015). Due to the gap in the existing literature related to the effectiveness of the use of food labels among consumers in Bosnia and Herzegovina, especially in Sarajevo Canton, the aim of this study was to assess the attitudes of consumers in Sarajevo Canton regarding the information on food labels, as well as their habits of food labels usage.

2. MATERIALS AND METHODS

This descriptive, cross-sectional study was conducted between June and July of 2017. The research included 400 respondents of both genders who were older than 18 years, of different socioeconomic statuses, living in Sarajevo Canton, who voluntarily agreed to participate in the research. An anonymous survey questionnaire based on previously conducted studies was used as a research instrument. The questionnaire was divided into two modules. The first module referred to the demographic and socioeconomic characteristics of the examined population, whereas the second module examined their practices and attitudes about using food labels. SPSS for Windows statistical software platform (version 19.0, SPSS Inc, Chicago, Illinois, USA) and Microsoft Excel (version 11. Microsoft Corporation, Redmond, WA, USA) were used for the statistical analyses of data. Nominal and ordinal variables in the study were analyzed using the χ^2 test. For the limit of statistical significance, the value $\alpha=0.05$ was used, whereas $p<\alpha$ was considered to be statistically significant for the value of the statistical test.

3. RESULTS

Results in Table 1 indicated that most respondents were female (60.5%) and were in the age group of 27–45 years (39.0%). In analyzing the material status of respondents, slightly more than half of the respondents in Sarajevo Canton had a monthly income exceeding 900 BAM (54.3%). More than half of the respondents had a college education or university degree (51.4%), were married (53.8%), and had a child (58.0%).

Table 1. Demographic and socioeconomic characteristics of the respondents (N = 400)

Variables		N	%
Gender	Male	158	39.5
	Female	242	60.5
Age (Years)	18–26	79	19.8
	27–45	156	39.0
	46–64	133	33.2
	65 and more	32	8.0
Monthly income	up to 500 BAM	81	20.2
	501–900 BAM	102	25.5
	901–1200 BAM	78	19.5
	1200 BAM more	139	34.8
Marital status	Married	215	53.8
	Single	166	41.5
	Cohabiting	19	4.7
Children in household	No	168	42.0
	Yes	232	58.0
Level of education	Primary school	17	4.3
	High school	177	44.3
	College	33	8.2
	University	173	43.2

BAM according to National Bank of Bosnia and Herzegovina the permanent fixed currency rate is 1EUR = 1.95583 BAM

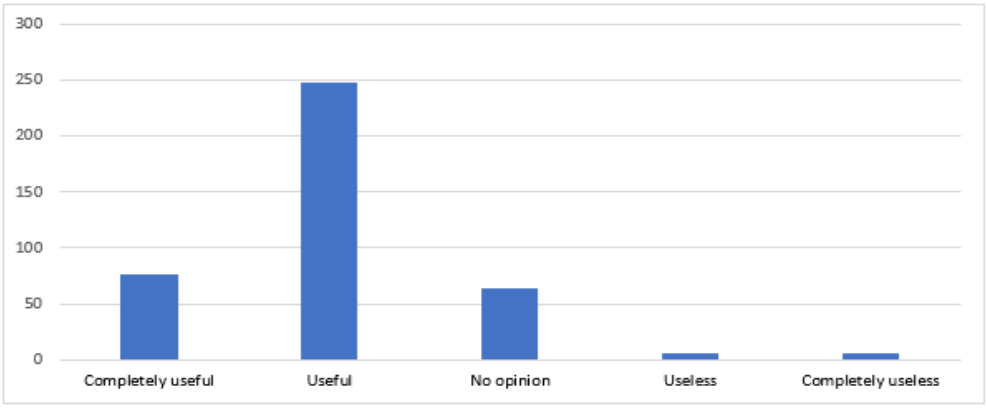
The frequency of use of food label information in relation to the demographic and socioeconomic characteristics of the respondents, as shown in Table 2, indicated that every fifth respondent, regardless of those factors, "always" read food label information. Among all respondents, most (46.75%) "sometimes" read food label information. The habit of reading information on labels depended on the gender of the respondent (p = 0.004). Respondents who "always" or "sometimes" read food label information were mostly female (72.4% and 63.1%), while male respondents dominated in the "never" category (65.0%). The age range for the specified categories did not have a significant effect on whether respondents read food labels. (p = 0.080). However, income showed a statistically significant effect (p = 0.015). Respondents whose income exceeded 900 BAM dominated the "always" and "sometimes" categories (66.7% and 57.2%), while responders with incomes less than 900 BAM significantly dominated the "rarely" and "never" categories (63.0% and 65.0%). The level of education had a significant effect on the frequency of use of food label information. Respondents with a high level of education used food labels more often than respondents who only had a primary or secondary education, who dominated the "rarely" and "never" categories (69.1% and 55.0%). The marital status of respondents, life in an extramarital relationship, and whether the respondent had or did not have children showed no significance in terms of the use of food label information among the surveyed population.

Table 2. Frequency of use of information on food labels in relation to demographic and socioeconomic characteristics of the respondents

			How often do you read/consult the information on food labels?					x^2test
			Always	Sometimes	Rarely	Only the first-time shopping	Never	p
Gender	Male	N	24	69	40	12	13	0.004
		%	27.6%	36.9%	49.4%	48.0%	65.0%	
	Female	N	63	118	41	13	7	
		%	72.4%	63.1%	50.6%	52.0%	35.0%	
Age (Years)	18–26	N	12	33	23	8	3	0.080
		%	13.8%	17.6%	28.4%	32.0%	15.0%	
	27–45	N	33	76	26	9	12	
		%	37.9%	40.6%	32.1%	36.0%	60.0%	
	46–64	N	32	67	23	8	3	
		%	36.8%	35.8%	28.4%	32.0%	15.0%	
	65+	N	10	11	9	0	2	
		%	11.5%	5.9%	11.1%	.0%	10.0%	
Monthly income	up to 500 BAM	N	12	35	25	5	4	0.015
		%	13.8%	18.7%	30.9%	20.0%	20.0%	
	501–900 BAM	N	17	45	26	5	9	
		%	19.5%	24.1%	32.1%	20.0%	45.0%	
	901–1200 BAM	N	17	41	9	7	4	
		%	19.5%	21.9%	11.1%	28.0%	20,0%	
	1200 BAM more	N	41	66	21	8	3	
		%	47.1%	35.3%	25.9%	32.0%	15,0%	
Marital status	Married	N	46	102	43	15	10	0.562
		%	52.9%	54.5%	53.1%	60.0%	50.0%	
	Single	N	35	78	35	7	10	
		%	40.2%	41.7%	43.2%	28.0%	50.0%	
	Cohabiting	N	6	7	3	3	0	
		%	6.9%	3.7%	3.7%	12.0%	.0%	
Children in household	No	N	30	78	39	11	10	0.638
		%	34.5%	41.7%	48.1%	44.0%	50.0%	
	Yes	N	57	109	42	14	10	
		%	65.5%	58.3%	51.9%	56.0%	50.0%	
Level of education	Primary school	N	3	1	9	2	2	0.001
		%	3.4%	0.5%	11.1%	8.0%	10.0%	
	High school	N	27	85	47	9	9	
		%	31.0%	45.5%	58.0%	36.0%	45.0%	
	College	N	4	12	10	5	2	
		%	4.6%	6.4%	12.3%	20.0%	10.0%	
	University	N	53	89	15	9	7	
		%	60.9%	47.6%	18.5%	36.0%	35.0%	
Total			87 (100.0%)	187 (100.0%)	81 (100.0%)	25 (100.0%)	20 (100.0%)	

Respondent's attitudes toward the usefulness of food label information are shown in Figure 1. Almost two out of three respondents (61.7%) considered information on food labels to be "useful," Whereas every fifth respondent considered food label information to be "completely useful" (19.3%). Every sixth respondent (16.0%) had a neutral opinion or "no opinion," and 1.5% of the 400 respondents believed that information on food labels were "completely useless" or "not useful."

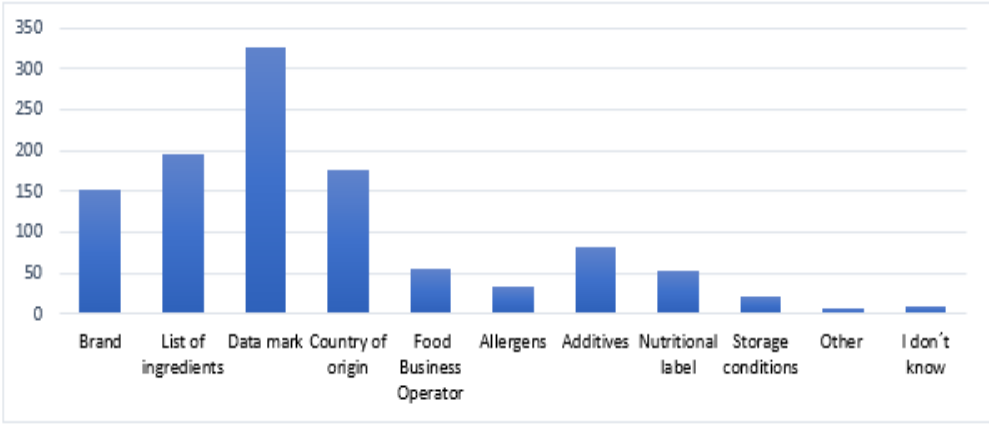
Figure 1. Respondent's attitudes toward the usefulness of food labels



Information sought from food labels

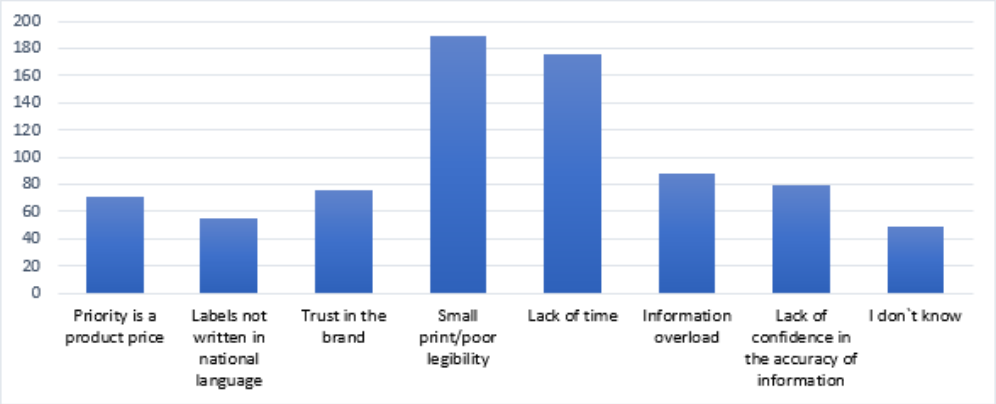
Respondents were asked to indicate what type of information they sought from food labels. Findings regarding responses to this question are presented in Figure 2. Information on food labels that respondents (81.3%) most often read and gave the highest priority was the expiration date. The next most read information was the list of ingredients (49.0%), country of origin (44.0%), product brand (38.0%), and food additives (20.3%).

Figure 2. Information that respondents most often use on food labels



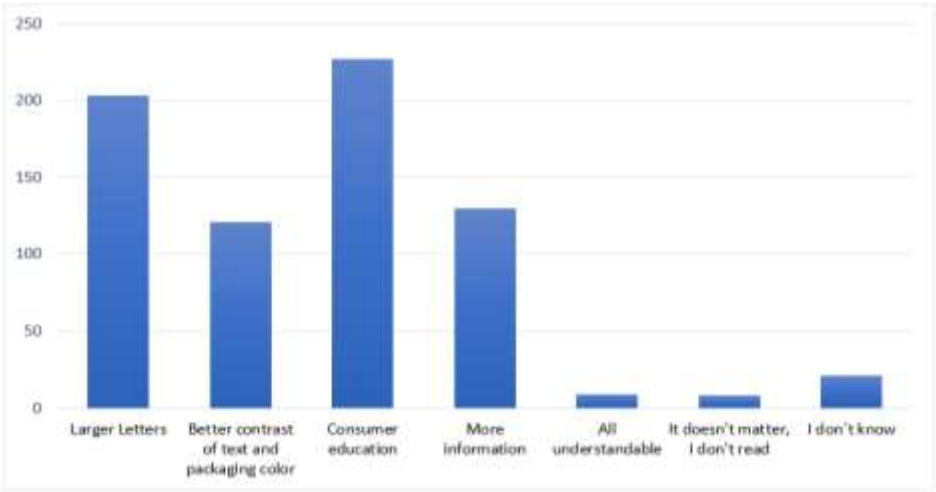
Reasons for the non-use of food labellin formation are shown in Figure 3. Among the 400 respondents, the most common reasons for not reading food label information were small lowercase letters and poor legibility of the text (47.3%) and lack of time while shopping (44.0%), whereas other reasons constituted between 12.3% and 22.0%.

Figure 3. Reasons for non-use of food label information among respondents



Respondents' answers to the question on how to improve the frequency of usage of food label information are presented in *Figure 4.* The four main factors that could increase the frequency of usage of food label information by consumers were consumer education (56.7%), bigger letters (50.7%), more information for consumers (32.5%), and better contrast between the text and background colour (30.3%).

Figure 4. Respondent's opinions on how to improve the frequency of food label use



4. DISCUSSION

This study revealed a high frequency of food label use among respondents, which was positively correlated with population-based studies conducted in the USA, where 80% of respondents used food labels (Chen, 2012), as well as with a study conducted in Tehran, Iran, where 82.8% of 2,123 respondents claimed to read food label information, of which 60% always read the information on food labels (Bazhan et al., 2015). Our findings revealed that a high percentage of respondents in this study (81.0%) had a positive attitude about the usefulness of food label information. Another study also confirmed the positive attitude of consumers, showing that 77.4% of respondents believed that food label information is useful for consumers (Mahdavi et al., 2012). In our study, food labels were dominantly read by women compared to men, people with a higher education level, and respondents with a higher socioeconomic status (persons with higher incomes). Respondent's age, marital status, and parenthood did not show statistical significance regarding the practice of reading food label information. Other population-based studies showed that food labels have a greater influence on the female population when choosing and buying products than on the male population. Furthermore, women often used and more strongly trusted food label information, which was correlated with the fact that the media significantly influences women's greater interest in food labels, which contributed to the dominant role of women in selecting and buying household food (Viola, 2016; Mandal, 2010). Respondents with a lower educational level or non-working respondents were generally associated with lower academic achievement and low income. They were more likely not to read food label information. They paid more

attention to special price offers and less or no attention to food label information, as was highlighted in other studies (Sathyasurya &Akshay, 2017; Ambak et al., 2018). People with a higher level of education and higher socioeconomic status more often use food label information and have more positive attitudes about the usefulness of information on food labels (Dörnyei & Gyulavári, 2016). The results of our study showed that the main reasons why consumers do not tend to read food label information are lowercase letters, poor readability of the text, and a lack of time they devote when selecting or buying food. The legibility of food label information was problematic for two-thirds of the respondents in our study. Similar results were obtained in several other studies in which the main barriers to the use of food labels among consumers were the small font or poor legibility of the text, lack of interest, lack of time, a low level of knowledge, and distrust in the food label information (Bazhan et al., 2015; Olatona et al., 2019). Interestingly, in our study, consumers pointed out that consumer education would significantly improve the frequency of use of food label information, as would larger letters and better contrast between the text and background colour, which were directly related to difficulty reading food label information. A similar study reported the same findings (Sokolić et al., 2015). Our study showed that the expiration date was the most common label information that respondents look for on food labels. This finding is consistent with earlier studies on food labels in terms of information to which consumers pay the most attention. (Hanoon, 2020; EU Commision, 2015).

5. CONCLUSION

The results of this study showed a high prevalence of self-reported responses regarding the frequency of food label use as well as a positive attitude about the usefulness of food label information. The use of food label information differed significantly by gender, income level, and level of education of the respondents. Barriers to the use of food label information indicated a need for better harmonization of food labels in terms of legibility as well as the need to increase the level of nutritional literacy through educational processes and various promotional programs tailored to consumer needs.

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