

FOOD-LABEL “CHECK BEFORE BUY” AND ASSOCIATION WITH DEMOGRAPHIC, NUTRITIONAL AND PURCHASING FACTORS IN A GROUP OF ROMANIANS

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Abstract

Food-label „check before buy” has been associated with making healthy food choices and shows the efficiency of the economical effort made when investing in nutritional labels. This study describes the prevalence of checking food labels and its association with demographic factors, purchasing behaviors and body mass index in a random group of Romanians. Descriptive tests and logistic regression were used to estimate factors with influence on the habit. Results showed that 81,1 % of the respondents check labels on a regular basis, the habit being mostly connected with being middle-aged, woman, living in a couple and in a big town, and having a greater preoccupation regarding body weight. 49,2 % check for nutritional facts and health claims, the rest of the respondents are interested just in the “best before” element. The fact that a half of the respondents are preoccupied by nutritional facts is important because these people can be a real target group for novel, health and bio food. Taking in account the fact that nutritional labeling, health claims and bio products have been recently introduced on the Romanian market (the nutrition labeling process has been started in 2007), the percent is not disappointing and shows a real potential of growth for the „health food” market. Efforts should be made in order to determine how all consumers can use and understand more detailed label information, especially nutritional one.

Key words: nutrition, labels, healthy food, food choices, purchase behavior

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1. INTRODUCTION

As chronic, degenerative diseases take the lead in the top of human killers, dethroning infectious diseases, it becomes clear that a compartment on which people can action in order to postpone the onset or to ameliorate the evolution of non-communicable diseases is nutrition. (EURODIET, 2001; Bidlack, 1996; Cowburn and Stockley, 2003; Koletzko et al., 1998; Lichtenstein, 1998; WHO/FAO, 2006). Making healthy decision in buying food is a very important behavior and, as previous studies have shown, can be influenced by information found on food labels (www.eufic.org, Zugravu et al., 2009). The introduction of nutrition labeling on foodstuff is a potentially important element in the overall strategy to combat obesity and non-communicable diseases. Improving the level of information available to consumers has the potential to improve consumer understanding

of different foods which in turn would stimulate changes in patterns of food choice and ultimately improve consumer health. (Cairns et al., 2009; EAS, 2009; Kolodinsky et al., 2008) Reading labels means making more advantageous decisions, like, for example, eating a lower fat diet. (Kreuter et al, 2007; Neuhouser et al, 1999) Studies revealed that label reading helps decrease the dietary risk factors for heart disease in elderly. (Macon, 2004).

Moreover, by noting the serving size and putting it in context to the entire package size, portion size estimation skills can grow (Abbot, 2007). So it is admitted that the label reading habit, in relation, of course, with the understanding of the information red on labels, is a component of a healthy lifestyle.

Different countries have different regulations regarding food labeling. More and more, nutrition labeling of food becomes a regular

practice, even though it implies very high costs that not all producers can afford.

In Romania, until 4 years ago only ingredients and calories were specified (with some exceptions, like the level of fat in milk or cream) on food labels. But in the last period main food producing companies introduced on market nutritional labels.

This means that on the food stuff package buyers find the quantity of major nutrients per 100 g or per serving size and also the percent with which the intake of the product contributes to the covering of the daily estimated quantity of nutrients needed by a certain person. The nutritional labels are found on many processed foodstuff, but there is not yet an evidence about the exact number of products on which this type of label is present, as it is for other countries. (Gruner et al., 2009). A fundamental element in the nutrition labeling-consumer health relationship is the first step in the process, namely ensuring the consumer reads the label. In this frame, the question is how many of the Romanians have learned the habit of label checking before buy, keeping in mind that the efficiency of the costs involved by the nutritional labeling can be ultimately quantified by the health consequences and the trend of diet modification in a healthy positive direction due to those labels. It is clear that assumptions about the benefits of labeling do find support in available studies, but further more targeted research is required before quantifiable cost benefits can reliably be identified.

The present study is a part o a larger investigation regarding nutritional and lifestyle habits in Romania. In this article, we present the label-checking behavior of Romanians from the southern counties of the country (Muntenia and Oltenia) and from the capital, Bucharest.

2. MATERIAL AND METHODS

Between October and December 2009 we carried out a cross-sectional pilot study. The selection of the group was web and phone based. We used posts asking for collaboration put on 4 web sites. We also got phone numbers

and emails of patients from 10 family doctors from the urban and rural areas of the southern Romania (the doctors were randomly chosen and asked to collaborate during a conference) and got in touch with every 10th person from the list of phones or emails. From the total number of persons we took contact with (1002), 642 agreed to answer to the questionnaire. We excluded those with medical occupations and those who were living in the period of the study, outside the country for at least 1 year (128). We accepted individuals seasonally working in foreign countries, with the condition to be absent from Romania for maximum 6 month/year. Questionnaires were sent by post, email or answers were gathered by phone. Thus, the final sample had 514 members. (Table 1).

Table 1. Age/gender in the group

Gender	Age groups							total
	18-24	25-34	35-44	45-54	55-64	65-74	≥75	
Wome n (%)	16,3	14	9,3	8,9	6,2	3,3	2,5	60,5
Men	10,3	8,5	6	4,3	4,4	4	2	39,5

Each member of the group had to answer to a questionnaire, a shortened variant of the IFIC questionnaire (www.ific.org), adapted to the necessities and to the material resources available in the study. The main chapters under which the questions can be classified are:

- demographical questions: age, gender, family situation, children in family, perceived economical status, place of residence;
 - health question: degree of satisfaction regarding present health - nutritional status questions: reported height and weight, from which BMI (body mass index) was calculated, interest paid to weight
 - purchasing behavior: main reasons in buying a foodstuff, regularly label checking before buy(no/yes), items regularly checked on labels, willingness to pay more for healthy/bio food.
- The questions had answers either in the form of a 5-points Likert scale of agreement, or in the

form of ready-provided answers from which the respondents were supposed to select the one considered most suitable. The perceived economical status was quantified on 5 levels, collapsed in the analysis in 3 (because of the very low number of respondents found in some categories). We named the 3 levels poor, medium and rich, but names are given strictly in the analysis (not on the questionnaires), in order to simplify the investigation and don't signify "stricto sensu" the respective words. The answers to the questionnaire were statistically analyzed by SPSS 14.0 program, using correlation tests and binary logistic regression (forward LR method).

3. RESULTS

The majority of the respondents answered that they regularly look on labels (81,1%). Different figures are available for different countries. Several studies have indicated that the percentage of consumers reading food labeling may range from 70, to 80%. (Cowburn and Stockley, 2003; Guthrie, 1995) Other studies have provided a considerably less optimistic picture of consumer practice, Whyn et al(1997) finding that label information was consulted in less than 1% of food purchases and Higginson (2002) recording 4% use of food labeling in normal shopping use.

The percent of women checking labels is a greater than men (83,8%, versus 77%), label checking being correlated with gender (Pearson's chi square corrected for continuity : -3.837, exact sig 2- sided =.049). In other studies, a gender difference was also found, women and girls being generally more interested in labels than men. (Byrd-Bredbenner, 2001; Kristal, 1998; Navarro, 2010; Smith, 2000; Wardle, 2004)

Regarding education: if earlier reports found that educated people looked more on labels (Navarro, 2010; Research Services Ltd., 1995), we didn't find a statistically significant correlation between education and looking on labels (spearman's correlation coeff.065, aprox sig .138). The explanation could be that in the study were not involved persons with a very

low education, due to the methods we used to form the sample (phone, e-mail, web sites). However, as seen in table 2, university graduates have the lowest percent of non-readers of labels (14,7%).

Table 2. Food-label „check before buy” * education crosstabulation

		Food-label „check before buy”	
		No	Yes
education (%)	highschool	20.7	79.3
	college	25.5	74.5
	university	14,7	85.3

The same fact could explain the non-significance of the economical status for the label-checking habit. Even though a little more of the „rich”(83.3%) than the „poor” (80.3%) look on labels, the difference is not important, in contrast with what has been found by other authors[18]. In reality, individuals have classified themselves in different economical classes more on a subjective perspective of the sufficiency of the income, than from an objective perspective. The distribution on age groups of individuals in relation with reading food labels is represented in Figure 1. The Spearman's correlation coef. of -.023 shows no statistically significant correlation between age and this behavior (aprox.sig.=.061), but we can see that the distribution of the habit is not homogenous in age groups. From 25 until 54 years, with a maximum in 45-54 years group, people are looking more on labels, compared with the very young age group (18-24 years), proving their interest about the characteristics of food. The very young might be less in the position of buying food, because usually they still live with parents and are seldom in charge of making supplies. Other studies showed either that younger people look more on labels than older ones (Byrd-Bredbenner and Kiefer, 2001; Sullivan and Gottschall-Pass, 1991) or that older persons are more interested in label checking. (Satia, Galanko, Neuhouser, 2005). Another demographical element associated with label checking is the marital (or family) status of the respondents.

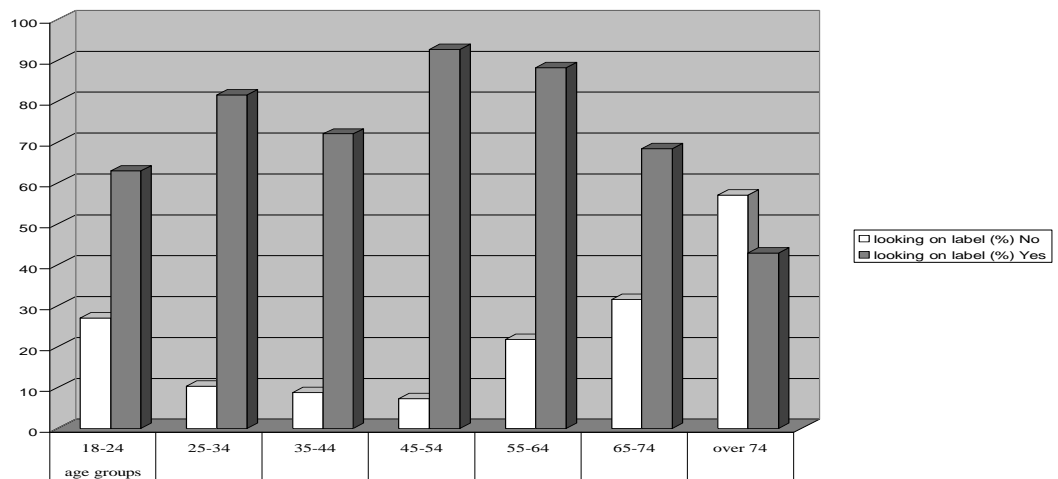


Fig.1. Food-label „check before buy” * age groups

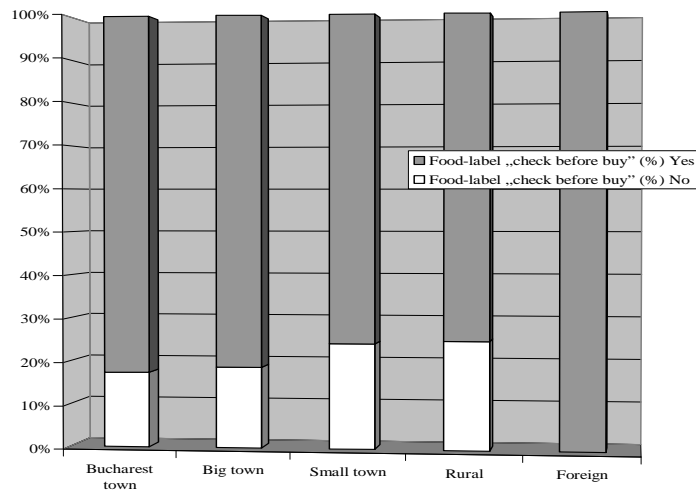


Fig.2. Food-label „check before buy” * place of residence

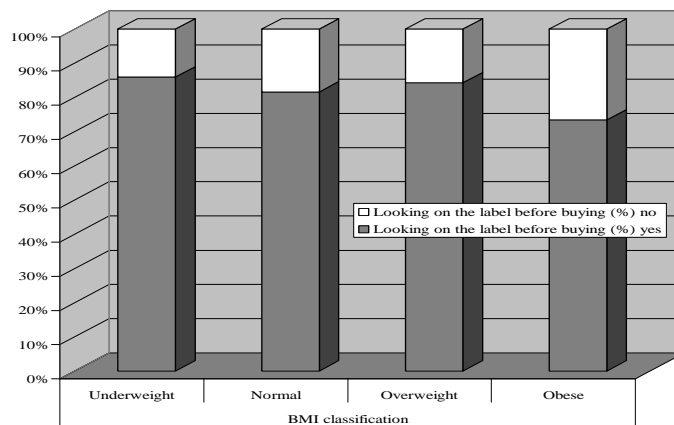


Fig.3. Food-label „check before buy” * body mass index category

Married or in-a-relationship persons are more conscious in label checking than singles, probably because they are in charge with buying food for the entire family and feel a greater responsibility in this domain (Pearson chi square corrected for continuity 18.5, asimp.sig 2-sided .00).

Having children, though, is not an answer for label checking, since the variable is non significant (Pearson chi square corrected for continuity 3.01, asimp.sig 2-sided .068).

The place of residence shows a significant correlation with label checking (contingency coef .147, aprox.sig. .022) (figure 2)

If other studies (Satia et al, 2003) showed that more overweight/obese persons look on labels, in the present study the BMI category is not correlated with label checking (spearman's correlation coef. -.064, aprox sig .148). (figure 3). However, underweighted and obese seem, indeed, to look more on labels than the rest.

But the preoccupation regarding weight shows a significant degree of correlation (spearman's correlation coef. .241, aprox sig .00), respondents more interested in body weight having more chances to look on labels than those less interested. The same can be observed with the link between looking on labels and satisfaction regarding personal health (spearman's correlation coef. .09, aprox sig .04). All the factors considered above have been introduced in a binary regression model (forward LR method), as independent variables, having as dependent variable the **food-label „check before buy”** habit (no/yes). All categorical variables had as reference their first category. The purpose was to find consistent predictors for the habit. The final model was checked for multicollinearity and outliers. The results are presented in table 3. Age, weight, weight preoccupation and family are the main predictors.

Table 3. Binary regression model for food-label „check before buy”

Item	Sig. (for Wald test)	Exp(B)	95.0% C.I. for EXP(B)	
			Lower	Upper
Age(25-34)	.021	2.519	1.150	5.522
Age(35-44)	.029	3.051	1.123	8.292
Age(45-54)	.020	4.116	1.245	13.611
Age(55-64)	.441	1.503	.533	4.237
Age(65-74)	.882	.928	.346	2.488
Age(≥75)	.046	.316	.102	.978
BMI(Normal)	.009	.240	.082	.701
BMI(Overweight)	.024	.240	.069	.830
BMI(Obese)	.000	.088	.023	.336
Preoccupation Weight	.000	2.352	1.677	3.298
Family(married)	.001	2.845	1.560	5.188
constant	.553	.710		

The results have to be interpreted in the frame of specific conditions present in contemporary Romania, an ex-communist country in which nutritional education and availability of food was scarce just 20 years ago. In the last years a lot of efforts have been done in the nutrition education field, but there is still a lot of work to be carried out in order to repair the after-effects of the past and to rise awareness about the necessity of performing a minute selection of food and not just to buy what is more

convenient or cheap, as described elsewhere. (Zugravu et al, 2003) Taking in account the main reasons for purchasing a foodstuff (convenience, price, taste, healthiness), the present study obviously found that persons who buy especially healthy food look more often on labels, than those driven by other reasons (Table 4). In the category of those very interested in healthiness of food, the percent of “label non checkers” is very small.

Table 4: Percent of persons not looking on labels in relation with main reason to buy a foodstuff

Reason to buy	Price					Taste				
	not at all	not much	medium	much	very much	not at all	not much	medium	much	very much
Not looking on the label	8.5%	11.7%	7.0%	5.4%	19.8%	6.7%	15.0%	3.3%	13.4%	12.0%

Reason to buy	Because convenient					Because very healthy				
	not at all	not much	medium	much	very much	not at all	not much	medium	much	very much
Not looking on the label	7.2%	8.6%	4.8%	30.6%	10.2%	12.0%	22.0%	21.9%	4.7%	5.5%

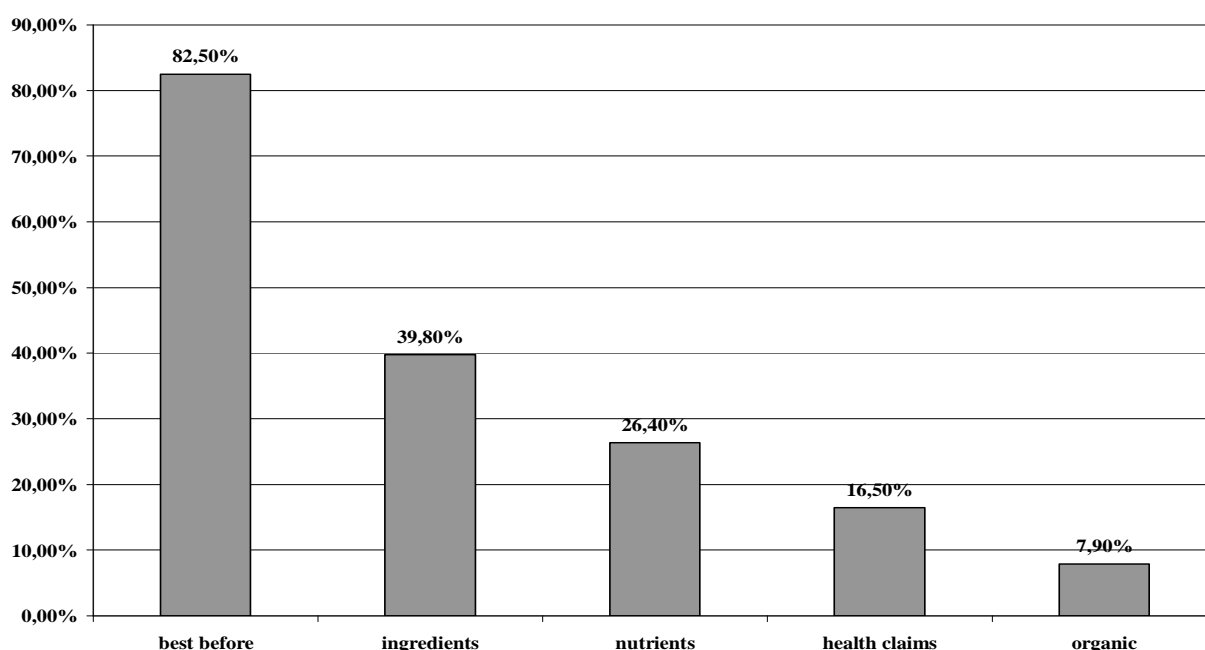


Fig.5. Reasons to check labels

The next step in the investigation was to find out the main elements searched usually on labels. There were the following alternatives: validity (“best before”), ingredients, nutrients + calories, health claims and organic (bio) (figure 5). It is clear that most of the label readers are mainly interested by the freshness of the products and, eventually, by the ingredients, but is less interested in nutritional elements. From the total number of the respondents, 49,2% search for nutritional facts, health claims or bio origin. Hence, some questions: is really the nutritional labeling of food a financially effort that pays off or is it still

necessary to carry out a lot of educational work in order to make it efficient?! Or: is the Romanian market ready for “health” food, meaning products offering, generally at greater prices, nutrients with direct influence in health or being obtained in “bio” conditions?! At least in the present study the answers are clear: Romanians need continuous nutrition education, but some of them are ready, in fact, to pay more for a presumed better food. But how many of the respondents are really eager to pay more, just to get health and eventually bio food?! The answer at this question must be judged with great circumspection, because the

subjectivity may be great. 62,6% of the answers were at the upper end of the Likert scale of agreement and 13,4%, at the lower end. There is a strong correlation between the label check habit and the willingness to pay more for health food (spearman correlation coef. = .274, sig (2-tailed) = .00). Obviously, the potential of the Romanian market in the health food domain is high.

4. CONCLUSIONS

Most of the Romanians look on labels, but mainly for verifying if the product is still fresh or searching the ingredient composition. Almost a half of the respondents are interested in nutritional elements, being a real target group for novel, health and bio food. Taking in account the fact that nutritional labeling, health claims and bio products have been recently introduced on the Romanian market (the nutrition labeling process has been started in 2007), the percent is not disappointing and shows a real potential of growth for the „health food” market.

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