

**AWARENESS AND USE OF NUTRITION INFORMATION ON FOOD PACKAGES
AMONG CONSUMERS IN MASERU (LESOTHO)**

Mahgoub SE^{1*}, Lesoli PP¹, and Gobotswang K¹



Salah Mahgoub

*Corresponding Author: Email: mahgoubs@mopipi.ub.bw

¹ Department of Home Economics Education, University of Botswana, Private Bag 0022,
Gaborone, Botswana

ABSTRACT

Food product labelling has become a popular policy tool, particularly with respect to the provision of nutrition and health information. Nutrition labelling is a valuable tool in learning how to apply nutrition information in a practical way. Nutrition information on food labels can help consumers to choose healthier food. For companies competing in the global food and beverage marketplace, understanding local consumer attitudes and purchase behaviour regarding healthy foods, nutrition, and labelling is critically important for success. This study attempts to evaluate the level of knowledge and use of nutrition information on food packages among consumers in Maseru, Lesotho. A structured questionnaire, covering aspects of knowledge and use of food labels and nutrition information, was used to collect information from two hundred and sixty consumers. The study also included open-ended questions on what consumers expected to be on the food label, what they understand by nutrition information, what its importance is, and if they think it should be included on the food package labels and why. The findings indicate that the main demographic features of the participants were: 67.3% female, 59.6% married, 55.9% completed primary, middle or high school, and 68.4% were poor. Majority (71.2%) of the participants claimed that they use a shopping list. Less than half of the participants (40.5%) indicated that nutrition information on food labels, rather than price, taste, appearance, habit, convenience, or brand name, was their main motivator to purchase foods. With regard to food label and nutrition information knowledge, a majority of the participants said they knew about them (59.6% for food label knowledge, and 69.2% for nutrition information knowledge). The same trend has been observed with respect to use of nutrition information on food labels when shopping, where 63.8% claimed that they utilise that knowledge when shopping. For the lowest income group, food price was the major determining factor of the types of foods they buy. A positive relationship between age of participants and nutrition information knowledge was observed. It was noted that as the level of education increased, the level of knowledge about food label increased. The level and use of nutrition knowledge when purchasing foods increased with age, education level and family income. Answers to the open-ended questions showed high degree of awareness about nutrition information on food labels, and why it is important to utilise that information.

Key words: Consumers, Food packages, Nutrition information

INTRODUCTION

During the last two decades, food product labelling has become a popular policy tool, particularly with respect to the provision of nutrition and health information [1]. Nutrition labelling is a valuable tool in learning how to apply nutrition information in a practical way. The purpose of nutrition labelling is to provide information on food products to reinforce healthy eating practices and support consumers in their efforts to improve their food choices. Nutrition labels provide information about the number of kilocalories and the amount of proteins, carbohydrates, fat, and certain other nutrients in a food [2]. It is essential for consumers to know about the nutrition information because it can help them to choose healthier food and to avoid contents or ingredients that they are allergic to. Consumers need to know what nutritional contents of foods are so they can purchase foods of better nutritional quality. Education on nutrition labelling is one component of a comprehensive nutrition education programme. It is important that consumers have basic nutrition knowledge first, before appreciating nutrition labeling. A health-conscious shopper uses the percentages shown on the label to determine how well each serving of food fulfils recommended nutritional requirement [3]. For companies competing in the global food and beverage marketplace, understanding local consumer attitudes and purchase behavior regarding healthy foods, nutrition, and labeling is critically important for success [4].

The utilisation of food labels and nutrition information on food packages by consumers has been the focus of a number of recent studies [5-15]. Results of research from Australia [5] indicate that there is a relatively high level of prompted awareness of most label elements, with health claims, novel foods and irradiated labels having the lowest prompted awareness. Nagya *et al.* [6] concluded that for consumers to establish or maintain dietary healthy practices they must have the necessary nutrition information on food labels and that they need to use the information. Another study [7] indicated that there is a positive relationship between the level of nutrition knowledge of the consumers when that knowledge is provided by health care providers. Barriers to the effective use of nutrition information on the food label include old age, low socio-economic status and lack of education [10]. Grocery shoppers in a study reported by Piché and Garcia [11] indicated that price, freshness and health considerations were the top three factors considered important when buying food. Wang *et al.* [12] argue that if label information is more usable by consumers, society can greatly benefit from a public health perspective. They further indicated that effectively designed nutrition disclosures facilitate the utilisation of nutrition information and that some consumer characteristics such as education affect the utilisation.

The present study attempts to evaluate the level of knowledge and use of nutrition information on food packages among consumers in Maseru, Lesotho. Lesotho is a small landlocked nation in Southern Africa, completely surrounded by South Africa, with a population of less than 2 million. Traditional foods include sugar beans, maize, pumpkin and wild spinach as the staple foods. Maize is eaten either as kernels or, after it has been finely ground, as stiff porridge with sour milk. Meat such as beef, mutton, goat or chicken is eaten on special occasions [16]. In areas near rivers, freshwater fish supplement the diet. Fruits grown are apples, apricots, peaches, pears and quinces [17]. The highly food insecure areas in Lesotho are characterized by decline in household food production and high dependence on

food purchase, showing the potential importance of knowledge on nutrition information on foods labels and its utilization. The majority of people in this region purchase a lot of packaged foods and therefore can make use of nutrition information provided on the food labels [18].

No previous studies on awareness of consumers in Lesotho about food and nutrition labeling are reported in the literature. The rationale for undertaking this study is to build strong consumer knowledge of nutrition and its relation to health. The specific objectives of the study were to find out: a) the factors that determine the types of foods consumers, in Maseru, Lesotho, buy from grocery stores; b) if the consumers have knowledge about nutrition information, how much do they know and how do they use that knowledge; c) the inter-relationships between socio-economic factors and the knowledge and use of food and nutrition labels. The hypothesis is that most consumers are aware of labels on food packages, but only a few understand their meaning and how to use them and how to use nutrition information. This is based on observations made by the researchers in various locations in Maseru and over a period of time.

METHODS

Research setting

The research focused on consumers who buy from grocery stores in Maseru, Lesotho. This is because most food items in grocery stores have food labels. Two hundred and sixty consumers were followed around the shops with their consent in order to observe how they choose their groceries, and then ask them some questions to find out if they look at the nutrition information before buying, why or why not, if they understand what that information means, and how they are related to health.

Permission was sought from management of the stores in which the study was conducted. The consumers participated willingly in the study without the influence of any incentives. Participants were drawn from different life status, age, sex, and ethnic groups.

Sampling

Four, out of twelve, grocery stores were randomly selected for the study. Convenience sampling was used to select consumers who participated in the study. The percentage of interviewees per supermarket was similar among the four stores.

Data collection

Interviews were conducted by University students, who studied courses with content on food processing, food labeling, and food laws and regulations. Questionnaires were used to collect data on consumers' knowledge and use of nutrition information. They were administered through face-to-face meetings with the consumers in grocery stores. The questionnaires included both open-ended and closed-ended questions. Closed-ended questions allowed for easy analysis of quantifiable data, save time and encourage ambiguous responses. Open-ended questions were included to give consumers the opportunity to express their views and knowledge about nutrition information and its use. Consumers were briefed, before the interviews, about the survey and its objectives and the possible benefits they may get from it.

The study was conducted at different times of the day, on different days of the week to avoid time or day preferences by consumers. Both open-ended and close-ended questions were used.

Data analysis

Both qualitative and quantitative data analysis techniques were used. Qualitative analysis was used for non-quantifiable data, especially data from unstructured interviews and open-ended questions. Qualitative data consisted of words that depict opinions and feelings of participants, and were explained. Quantitative data were coded, entered into the SPSS programme and analysed. The level of consumers' knowledge on nutrition labeling was evaluated by comparing their answers to standard knowledge on nutrition.

RESULTS

Results in Table 1 indicate that about two thirds (67.3%) of all participants, were female. The age range of a large number of participants (40.8%) was 21-30 years. Consumers younger than 20 years or older than 50 years constituted the least groups of shoppers. More than half (59.6%) of the participants were married. About half (53.8%) of the families had 3-5 members. Families of participants with 6 or more members tend to be more than families with fewer than 2 members. With regard to education level, a little more than half (55.8%) of the participants completed primary, middle or high school only. A majority (59.4%) of the participants tend to do their shopping occasionally. About a quarter (24.4%) of the participants shop twice a week. A normal tendency of the identity of the breadwinner was observed: either one or both spouses being breadwinners constitute about half (51.9%) of the participants. It was unusual to find children as breadwinners, although at small percentage (1.9%). Circumstances that lead to this were not investigated. Most (68.4%) families of the participants fall among the poorer sectors of the society, which earn 2500 Maloti or less (ca \$400) monthly.

As shown in Table 2, the majority (71.2%) of the participants claimed that they use a shopping list. Less than half of the participants (40.5%) indicated that nutrition information on food labels, rather than price, taste, appearance, habit, convenience, or brand name, was their main motivator to purchase foods. About one fifth (19.2%) of the participants based their food choices on price. With regard to food label and nutrition information knowledge, a majority of the participants said they knew about them (59.6% for food label knowledge, and 69.2% for nutrition information knowledge). The same trend has been observed with respect to use of nutrition information when shopping, where 63.8% claimed that they utilise that knowledge when shopping.

A positive relationship between age of participants and nutrition information knowledge was observed (Table 3): as age increased (up to 50 years), the level of nutrition information increased. A large majority (89.8%) of participants who fall in the age bracket 41-50 years indicated that they knew what nutrition information was. Participants below the age of 20 and above the age of 50 had less knowledge of nutrition information. Similar trend was also noted in the positive relationship between education level and knowledge of what a food label is

(Table 4): as the level of education increased, the level of knowledge about food label increased. All participants who had a University Degree or a Masters had knowledge of what a food label is.

Results in Table 5 indicate that nutrition information seemed to be the major factor that motivated participants with different educational backgrounds to purchase the specific types of foods. The food brand came at the bottom of the list as a factor that determined the type of food bought by participants, and that was only mentioned by participants with the least level of education (high school and below). A positive relationship also existed between the level of education and the main factor (nutrition information) that motivated consumers to choose the types of foods they buy.

Table 6 shows the relationship between family income and the factors that affect the types of foods they buy. It was clear that nutrition information was the major factor that affects the decision of consumers participating in the study to buy the types of food they buy. This cuts across all income-range groups with the exception of those earning less than M1000/month (the lowest income group studied). For the lowest income group, food price was the major determining factor of the types of foods they buy. Results in Table 7 show an expected positive relationship between knowledge of “what a food label is” and “what nutrition information is”. Of those who said they know what a food label is, 90.6% knew what nutrition information is. About two thirds (64.9%) of those who do not know what a food label is, do not have knowledge of what nutrition information is.

Summary of answers to open-ended questions:

Q: What do you think should be included on the food label?

Summary of answers (representing 60% of respondents):

- Nutrition information about all foods in the grocery store
- Information on the amount per serving of: saturated fat, cholesterol, dietary fibre, and other nutrients of major health concern
- Nutrient reference values expressed as % Daily Values
- Standardised definitions of terms that describe a food’s nutrient content, such as “light”, “low fat”, “high fibre”, to ensure that such terms have the same meaning for any product on which they appear
- Standardised serving sizes to help in comparisons between similar products
- Proper health claims that will help consumers concerned

Q: Explain, in your own words, what you understand by “Nutrition information”

Summary of answers (representing 65% of respondents):

- The nutrients contained in the food item and their percentages
- The information about the amounts of vitamins, proteins, fibre, carbohydrates, fats and the amounts that one gets from a serving

Q: What is the importance of “Nutrition information”?

Summary of answers (representing 50% of respondents):

- To assist consumers in identifying and choosing foods that contribute to a healthy diet

Q: Do you think “Nutrition information” should be included on food package labels? If Yes, why?

Summary of answers of those who said, “Yes” (representing 30% of all respondents):

- So that consumers are well informed and can make their own informed choices when buying food items
- It might encourage a consumer to buy a particular food item based on nutritive value
- It gives information on nutrients, which some people might be allergic to, or some consumers want to avoid
- Doctors might recommend to a patient to eat foods rich in a particular nutrient. Nutrition information will help to choose the appropriate foods

DISCUSSION

The aim of this study was to find out if consumers, in Maseru, Lesotho, have knowledge of nutrition information on food package labels when shopping and to what extent they use that knowledge to choose foods to buy. The results provide information on consumers' awareness, knowledge and use of food labels, as well as their ability to interpret nutrition information appropriately and make food choices accordingly. These results are expected to help in explaining the reasons that contribute to food choices made by consumers and in coming up with recommendations that will guarantee that consumers are well informed on the nutrition information and can use it whenever they want. Findings of this research could form the basis for a mass population approach for future information and education strategies for health professionals and other stakeholders interested in consumer awareness activities.

As the findings of this study indicate, the majority (71.2%) of the participants claimed that they use a shopping list, and less than half of them (40.5%) indicated that their choice of specific foods was based on nutrition information. The same trend has been observed with respect to use of nutrition information when shopping, where 63.8% claimed that they utilise that knowledge when shopping.

There is considerable debate about the influence of nutrition knowledge on food purchase behaviour. Although results from previous studies [19] suggest that nutrition knowledge does not have an effect on label use, confirming the weak link hypothesis between knowledge and behaviour, the findings of the present study suggest that a high percentage of participants use nutrition knowledge in choosing foods when shopping. This could be a true reflection of the situation or the participants were shy to say “*we don't know*” or “*we don't use that knowledge*”.

According to ASD/AMD (Associated Surplus Dealers/Associated Merchandise Dealers) [20] on average, two in 10 consumers in Asia Pacific, Europe and North America "always" check the nutritional labels on packaging, with Latin Americans the most label-minded, where a third of consumers claim to "always" check labels on packaged food. While consumers are checking labels, they do not necessarily understand what they are reading. Half of the world's consumers said they only "partly" understand the nutritional labels on food, with 60 percent of Asia Pacific's citizens leading the world in this lack of understanding, followed by Europeans (50 percent) and Latin Americans (45 percent). Most conversant with food labeling were the North Americans, with 64 percent claiming to "mostly" understand food panels. However, there is a difference between what consumers believe and how they behave. Although 55% know they should eat healthier, they do not; 52% believe that healthy food should taste good and are not willing to give up taste for health; and 54% select foods based on the Nutrition Facts panel. Only 37% of consumers select foods primarily on their nutritional content [20].

Consumers in the United States of America (65%), Portugal (64%), Canada (61%), New Zealand (61%), Spain (60%), South Africa (59%), Norway (57%), and Mexico (56%) are among those who most understand nutrition labels. Consumers in Lesotho, represented by participants in the present study, understand nutrition information at a similar level (59.0%) as consumers in South Africa. In general, consumers' understanding of nutrition labeling for products is less than optimal, particularly in developing markets [20].

A recent study, published in the November, 2006 issue of the *American Journal of Preventive Medicine*, and reported by Douaud [21] showed a significant deficiency in the public's understanding of food labels. In the study, poor label comprehension was correlated with low-level literacy and numeracy skills, but even patients with higher literacy could have difficulties interpreting labels. Not only could these findings point to a need for simpler labels, but they could also add weight to arguments coming from the supplement industry claiming wordy FDA-approved health claims on packaging are too confusing for consumers [21]. The relationships between a number of factors including age, level of education, and family income of the participants and the level of knowledge and use of food labels and nutrition information have been studied. Direct relationships have been observed: level of nutrition knowledge and use increased with age, education level and family income. These findings are similar to those reported by Nayga [22] who studied how socio-demographic characteristics of the household's main meal planner affect use of nutrition information. The results of that study generally suggest that well educated, female main meal planners are more likely to use various types of nutrition information than others. The study concluded that household size, race, employment status, urbanisation, region, age and income are also significant factors affecting the use of nutrition information.

A positive relationship between age of participants and nutrition information knowledge was observed. A similar trend was also noted in the positive relationship between education level and family income and knowledge of what a food label is: as the level of education increased, the level of knowledge about food label increased. It was clear that nutrition information was the major factor that affects the decision of consumers participating in the study to buy the types of food they buy.

Answers to the open-ended questions, particularly the questions:

2. *What do you think should be included on the food label?*
3. *What is the importance of "Nutrition information"?*
4. *Do you think "Nutrition information" should be included on food package labels? If Yes, why?*

showed high degree of awareness on food labels, nutrition information and why it is important to utilise such information.

The ultimate purpose of nutrition labelling information is to assist consumers in identifying and choosing foods that contribute to a healthy diet. A nutrition labelling education strategy should, therefore be integrated into broader behaviour change strategies related to nutrition education and health to assist consumers in bridging the gap between current dietary practices and dietary recommendations. Information does not lead to behaviour change unless it can overcome counteracting psychosocial, behavioural and environmental barriers. The underlying problems include: lack of adequate nutrition education and knowledge, and poor communication to end users.

The American Dietetic Association [23] realises that nutrition education programmes must go beyond merely providing information. They indicate that to be truly effective, programmes must incorporate methods for actually creating behaviour change, in order to bridge the widening gap between consumers' awareness of nutrition and their actual practices. The objective is to provide consistent, understandable, and usable labels that can help consumers make healthier food choices [6]. If this goal is to be attained, it is essential to determine which type of consumer uses or does not use the labels. Understanding why and how consumers utilize food labels is a prerequisite to designing food labelling regulations, improving public health, enhancing the profitability of the food industry and designing messages appropriately. A monitoring facility that enables proper assessment of the impact of these activities is also required.

CONCLUSIONS

Consumers in Maseru, Lesotho, as represented by participants in the present study, showed a level of knowledge and use of nutrition information on food packages comparable to that of consumers worldwide and specifically in the region. A nutrition education strategy and appropriate programmes could be designed and implemented to raise the level of knowledge about nutrition labeling and at the same time encourage behaviour change with regard to applying knowledge on nutrition information for food purchase choices. Further studies need to be conducted in the Southern African region to investigate other aspects of food and nutrition labeling such as how frequent do consumers check nutrition information on food labels; do they understand what they read on food labels? Is that understanding reflected in their behaviour of food purchase and consumption?

Table 1. Demographic & economic characteristics of participants (N = 260)

Characteristics	% Of participants
<u>Sex</u>	
Male	32.7
Female	67.3
<u>Age range (years)</u>	
< 20	9.9
21-30	40.8
31-40	15.8
41-50	19.6
> 50	13.9
<u>Marital status</u>	
Single	32.7
Married	59.6
Widowed	7.7
<u>Family size</u>	
2 & below	9.6
3-5	53.8
6 & more	36.6
<u>Education level</u>	
High school & below	55.8
Certificate	15.4
Diploma	15.4
Degree	11.5
Masters	1.9
<u>Frequency of shopping</u>	
Daily	10.2
Twice a week	24.4
Every weekend	4.0
Occasional	59.4
Any time	2.0
<u>Breadwinner of the family</u>	
Father	7.9
Mother	15.7
Both parents	7.9
Guardians	3.9
Siblings	3.9
Grandparents	1.9
One spouse	31.4
Both spouses	25.5
Children	1.9
<u>Family income (M/month)</u>	
1000 & less	37.6
1001-2500	30.8
2501-3500	15.8
3501-4500	7.9
> 4500	7.9

Table 2. Factors related to awareness about, and use of, food labels and nutrition information (N = 260)

Factor	% Of participants
<u>Does consumer use shopping list</u>	
Yes	71.2
No	28.8
<u>What motivates consumer to choose foods</u>	
Price	19.2
Nutrition information	40.5
Taste	15.4
Appearance	1.9
Habit	17.3
Convenience	3.8
Brand name	1.9
<u>Does consumer know what a food label is</u>	
Yes	59.6
No	38.5
Not sure	1.9
<u>Does consumer know what nutrition information is</u>	
Yes	69.2
No	30.8
<u>Does consumer use nutrition information when shopping</u>	
Yes	63.8
No	27.7
Occasionally	8.5

Table 3. Relationship between consumers' age and their knowledge of what nutrition information is (N = 260)

Age range (years)	Do you know what nutrition information is?	
	%	
	Yes	No
< 20	39.6	60.4
21-30	66.7	33.3
31-40	75.3	24.7
41-50	89.8	10.2
> 50	56.8	43.2

Table 4. Relationship between consumers' education level and their knowledge of what a food label is (N = 260)

Education level	Do you know what a food label is?	
	%	
	Yes	No
High school & below	48.4	51.6
Certificate	87.7	12.3
Diploma	50.0	50.0
Degree	100.0	0.0
Masters	100.0	0.0

Table 5. Relationship between education level of consumers and what motivates them to buy the food they buy (N = 260)

Education level	What motivates consumers to buy						
	%						
	Price	Nutrition	Taste	Appearance	Habit	Convenience	Brand
	Information						
High school & below	24.2	24.2	17.2	0.0	24.2	6.8	3.4
Certificate	12.3	63.1	0.0	12.3	12.3	0.0	0.0
Diploma	24.7	24.7	38.3	0.0	12.3	0.0	0.0
Degree	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Masters	0.0	100.0	0.0	0.0	0.0	0.0	0.0

Table 6. Relationship between family income of consumers and what motivates them to buy the food they buy (N = 260)

Income range (M/month)	What motivates consumers to buy						
	%						
	Price	Nutrition Information	Taste	Appearance	Habit	Convenience	Brand
1000 & less	31.9	26.3	10.4	0.0	26.3	5.1	0.0
1001-2500	12.3	44.1	18.8	6.2	6.2	6.2	6.2
2501-3500	25.3	62.7	12.0	0.0	0.0	0.0	0.0
3501-4500	0.0	49.4	25.3	0.0	25.3	0.0	0.0
4501 & more	0.0	49.4	25.3	0.0	25.3	0.0	0.0

Table 7. Relationship between consumers' food label knowledge and nutrition information knowledge (N = 260)

Do you know what a food label is?	Do you know what nutrition information is?	
	%	
	Yes	No
Yes	90.6	9.4
No	35.1	64.9

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