

# Understanding of Food and Nutrition Labeling among Non-Food Major University Students in Gyeongbuk

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**Abstract -** This study aims to identify the understanding of food and nutrition labeling in non-food major university students in some regions and provide basic data for nutrition education. To this end, our survey questionnaire was conducted in 195 university students in G region and analyzed with SPSS19.0. As a result, it was found that university students checked expiration date, product name, and price in order when they purchased foods and their understanding and recognition of nutritional information was low. The percentage of students who had ever been taught about nutritional labeling was 31.8% and that of students who thought it necessary to train or promote about nutritional labeling 87.7%. However, the percentage of students who said that they would participate in a training session if any opportunity to learn about nutritional labeling would be given was 28.7%.

**Keywords –** university student, nutrition labeling, food labeling, nutrition education

## I. PURPOSE OF RESEARCH

Now in Korea, with increasing women's social participation and single-person households, eating out or eating processed foods is also increasing. The recently spotlighted HMR (home meal replacement) is also a processed food whose convenience is highlighted and has grown up rapidly every year, and with the increasing supply and demand, consumers' demands of products are changing continuously.

With the increasing interests in health, consumers check ingredients used, food additives, and nutritional information as well as taste and price, as selection standards for processed foods, meticulously. Such food labeling aims to mark various information on foods such as product name, type of food, manufacturer's name and its location, name of ingredients, content, date of manufacture, expiration date or best before date, intake and storage method, precautions before intake, and nutritional ingredients on the surface of package or container to promote hygienic handling of foods, provide consumers with accurate information, and obtain fair trade[1]. In addition, nutrition (ingredient) labeling aims to mark the content of nutritional ingredients contained in a certain amount of product as one of the food labeling items in order to provide consumers with appropriate nutritional information and help to select foods reasonably and keep one's body healthy. Nutrition (ingredient) labeling system provides information on type and content of major nutrients contained in processed foods to primarily induce consumers to be healthy and select foods reasonably and further, promote good health that selection of healthy foods will have an impact on consumers' health results[2].

The United States has enforced the Nutrition Labeling and Education Act since 1990 and since this law was executed, the percentage of consumers who utilize nutrition information on processed foods increased. Besides, Canada, England, Australia, New Zealand, Japan, and EU made it mandatory to label nutritional ingredients on the surface of food products. Korea introduced the nutrition (ingredients) labeling system for the first time in 1995, and in 1996 the next year, the matters on the nutritional ingredients labeling in the 'Labeling Standards for foods, etc' enforced by the notification of the Ministry of Food and Drug Safety in accordance with the Food Sanitation Act and gradually expanded target items to be labeled[3]. Indeed, however, consumers usually check expiration date rather than nutritional profiles when they purchase processed foods.

University students in Korea suffered from the difficulties in establishing right eating habits although they were in a very important period that they had to be out of their parents' control and responsible for their own health. University students in our country need to be trained exactly about foods that they intake, because they tend to be negligent in their health care due to irregular eating habits, intake of favorite foods, life style disease, and excessive dieting. In a research on university students' recognition of food labeling[2, 4, 5], it was found that university students who usually checked food profiles had higher interests in hygiene and nutrition and showed relatively excellent eating habits and the groups with high nutrition knowledge checked food profiles more frequently and considered more nutrition and safety. However, their recognition of food profiles was found to be low overall. Thus the necessity of continuous nutrition education is required. This study aims to identify the recognition and utilization of food profiles in university students without majoring in foods, who are relatively lower in nutrition knowledge and provide them with the necessity of nutrition education for their health care and basic information necessary for activating food labeling.

Based on this, our aim is to encourage university students to promote their quality of life by forming their healthy eating habits.

## II. RESEARCH METHODS

### 2.1. Subjects and data collection methods

In this study, survey questionnaires were distributed to 200 male and female university students majoring in non-food departments attending G University located in Gyeongbuk. Among which, 195 copies of questionnaire were finally used for our statistical analysis, except the data whose responses were found to be insufficient.

### 2.2. Research instruments

To understand food and nutrition content labeling, we used the structured questionnaire whose question items were modified or complemented by referring to the previous researches[6, 7]. The nutrition content labeling related educational contents were measured on a 5-point Likert scale, and the higher the score was, the higher the influence was.

### 2.3. Methods of data analysis

All data were processed with the SPSS statistical program. General aspects, recognition of food and nutrition labeling, and nutrition labeling related education were indicated in terms of frequency and percentage, and significance was tested with  $X^2$ -test and P-Value.

## III. RESULTS

### 3.1. General characteristics of the subjects

The subjects investigated were 195 individuals in total: 96 male students (49.2%) and 99 female ones (50.8%). When they were asked how their health condition was, 84.1% of the students replied that they tended to be 'healthy.' In response to their present eating life, 39.5% of them replied that they were bad and 23.1% replied that they were good. When they were asked about their interests in eating life, 15.9% of them replied that they had few interests and 36.9% replied that they had interests. This suggested that their eating habit wasn't good, but they usually had a high interest in eating life.

Furthermore, as a result of identifying the frequency of eating out (including dormitory and cafeteria), it appeared that the number of students who did not eat out at all was 12 individuals (6.2%) and the number of students who ate out 15 times or more a week was 6 (3.1%). In frequency of eating out, the percentage of students who ate out 6-10 times a week was 40.5%, which suggested that the frequency of eating out was relatively higher.

### 3.2. Understanding and recognition of food and nutrition labeling

As a result of asking if they usually checked food profiles when they had to buy foods, it was found that 114 students replied that they 'did not check at all' (58.5%) and 81(41.5%) replied that they 'checked mostly.' Both male and female students checked expiration date (77.9%) above all, among the food profiles, followed by product name (15.4%) and price (6.7%) (Table 1).

Table -1 Food Label Reading of the Subjects

|        | Product name           | Expiration date | Price  | $X^2$ | p-value |
|--------|------------------------|-----------------|--------|-------|---------|
| Male   | 20(20.8) <sup>1)</sup> | 69(71.9)        | 7(7.3) | 4.655 | 0.098   |
| Female | 10(10.1)               | 83(83.8)        | 6(6.1) |       |         |

<sup>1)</sup> Number of subjects, ( ) : % of subjects

In the questions asking them about recognition and understanding of nutrition information, female students (81.8%) had a higher recognition of nutrition information than male ones (58.3%). Furthermore, in the questions about understanding of nutrition information, female students' level of understanding (74.8%) was higher than male students' (55.2%).

In the questions about the reasons why they checked nutrition (information) labeling, both male and female students replied that they did so 'for their health care,' followed by 'weight management' and 'simple curiosity' in order. It is judged that nutrition (information) labeling plays a role in informing calorie or nutrient.

In the questions about the reasons why they did not check nutrition (information) labeling, both male and female students replied that they 'purchased habitually' and 'the letters were too small or crude.' In case of female students, one of the reasons why they did not check was 'distrust in labeling' (Table 2).

Table -2 Nutrition Label Reading of the Subjects

|  |                                     | Male                   | Female   | X <sup>2</sup> | p-value |
|--|-------------------------------------|------------------------|----------|----------------|---------|
| Awareness of nutrition label             | No                                  | 40(41.6) <sup>1)</sup> | 18(18.2) | 17.376         | 0.001   |
|  | Yes                                 | 56(58.3)               | 81(81.8) |                |         |
| Understanding of nutrition label         | No                                  | 43(44.8)               | 25(25.3) | 11.383         | 0.010   |
|  | Yes                                 | 53(55.2)               | 74(74.8) |                |         |
| Reasons for checking nutrition label     | To manage health                    | 55(57.3)               | 54(54.5) | 11.519         | 0.021   |
|  | Specific disease management         | 6(6.3)                 | 6(6.1)   |                |         |
|  | To manage weight                    | 16(16.7)               | 15(15.2) |                |         |
|  | To compare with other products      | 9(9.4)                 | 1(1.0)   |                |         |
|  | Out of curiosity about now products | 10(10.4)               | 23(23.2) |                |         |
| Reasons for not checking nutrition label | Distrust of food labeling           | 7(7.3)                 | 24(24.2) | 27.214         | 0.000   |
|  | Not used to read it                 | 72(75.0)               | 38(38.4) |                |         |
|  | Small print                         | 14(14.6)               | 31(31.3) |                |         |
|  | Hard to understand                  | 3(3.1)                 | 6(6.1)   |                |         |

<sup>1)</sup> Number of subjects, ( ) : % of subjects

### 3.3. Understanding and recognition of food and nutrition labeling

In the questions about if they were trained about food and nutrition labeling, it was found that 133 students (68.2%) weren't so. In addition, in the questions about the necessity of training or promotion about nutritional labeling for their right food selection and consumption, the number of students who replied that such training or promotion would be necessary was 171 (87.7%) in a total of 195. In the questions about if they would be willing to participate in training in case it is provided, 56 students (28.7%) replied that they would participate, and the number of students who replied that they would not participate was 24 (12.3%). Most of the students could not decide whether to participate or not.

In the questions about how nutrition labeling education would have an influence on them, most of the students made a positive answer. In the questions about 'if they could obtain right nutritional knowledge' by item, 106 students (55.9%) replied "I think I could", and in the questions about 'if it could be helpful for them to choose foods when they have to control their weight, 121 students (62.1%) replied "I think it could help." Besides, in the questions about 'if it could be helpful for improving their eating life,' 119 students (60%) replied "I think it could help."

## IV. CONCLUSION AND DISCUSSION

This study was conducted to identify the actual condition of the use of food and nutrition labeling, and nutrition labeling related education in non-food major university students and their level of understanding and then provide clients with quality service as basic data and promote their healthy eating habits. Here, I discuss some significant results among them.

In the first place, as a result of asking about the food labeling matters, the questionnaire survey included such items used in food labeling as net contents, ingredients and contents, nutritional information, manufacturer, and storage precautions, but no items were identified except product name, expiration date, and price, which suggested that they lacked understanding of food and nutrition labeling. Yu Gyeonghye *et al.* (2012)[8] also reported that the item that was thought as most important in food labeling was 'expiration date'(66.4%) and thus was consistent with the findings from this study.

When they were asked if they would be willing to participate in nutrition related education if executed, 28.7% of the students replied that they would be willing to do so, but 12.3% of them replied that they wouldn't. The majority of the students were found to have not decided if they would participate or not. This seems to be because students did not recognize the necessity of nutrition education and they purchased foods according to preference or habit rather than nutrition. But when they were asked how nutrition labeling education would have an influence on them, many of the students answered in a positive way. Therefore, students need to be motivated to participate in nutrition education for their healthy eating habits very actively and positively.

Most of the previous researches on recognition of nutrition labeling were conducted to study the students majoring in food or nutrition or adults. university students ate a lot of snacks or late-night meal and preferred instant or fast foods. Due to the increasing interests in appearance and unrestricted university life, their healthy eating habits were found to be threatened by skipping a meal, deviated food habit, irregular meals, drinking and smoking. Generally, many

university students, regardless of major, tended to purchase cheap and favorite foods when they had to choose any food and their eating habits were irregular, which might incur unbalanced physical condition.

This study has many limitations in generalizing the results because it was conducted in limited groups of university students in some regions and relatively fewer research groups. However, the findings from this study would be utilized to help university students form healthy eating habits if they are provided with nutrition education through which they can choose foods to their own physical condition and increase the utilization of nutrition profiles. Furthermore, such findings are expected to be used as basic knowledge for students majoring in health and welfare, two majors unrelated to foods to provide clients with quality service.

#### V. ACKNOWLEDGMENTS

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