



Faculty of Resource Science and Technology

Study on Knowledge of Nutrition Facts on Food Labels and Their Impact on Food Choices on Consumers [P3 Categories] in Johor Bahru, Johor

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Bachelor of Science with Honours
(Resource Biotechnonology)
2022

Study on Knowledge of Nutrition Facts on Food Labels and Their Impact on Food Choices on Consumers [P3 Categories] in Johor Bahru, Johor

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A thesis submitted in partial fulfilment of the Requirement of The Degree Bachelor of
Science with Honours
(Resource Biotechnology)

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Programme of Resource Biotechnology
Faculty of Resource Science and Technology
UNIVERSITI MALAYSIA SARAWAK

2022

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ACKNOWLEDGEMENT

I would like to express my gratitude and appreciation to all who have been involved directly or indirectly to complete this final year project (FYP). Special thanks to my supervisor Dr. Elexson Nillian and co-supervisor Mr. Azra Tilai whose help, stimulating suggestions and encouragements throughout this project. I also sincerely thanks for the time spent proofreading and correcting my mistakes.

I would also like to show my gratitude to my family, friends, groupmates and Jabatan Perkhidmatan Awam (JPA) whose support and encourage me financially and emotionally to complete this final year project.

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ABSTRACT

Food labels are educational and marketing tools found on all food packaging on the market. The issue develops when the consumer disregards the product label, affecting their food selection. The incorrect choices can result in an unbalanced and harmful diet for the consumer. The primary goals are to explore the impact of nutrition data on consumer food selection and food label compliance with Food Registration 1985 label requirements. A consumer who understands and adheres to the food nutrition label will have a healthy body and a clear mind. The questionnaire distribution to gather data demonstrates that the responder reads the food label and understands the relevance of nutrition. Aside from that, the majority of food products on the market meet the Food Registration 1985 standards. The study aims are to raise consumer knowledge of food labels and encourage them to utilize them to make the best possible food choices.

Key words: food label, Food Registration 1985, healthy body, questionnaire, increase awareness

ABSTRAK

Label makanan ialah alat pendidikan dan pemasaran yang boleh didapati pada semua pembungkusan makanan di pasaran. Isu ini berkembang apabila pengguna mengabaikan label pada produk yang akan menjejaskan pemilihan makanan mereka. Pilihan yang salah boleh mengakibatkan diet tidak seimbang dan berbahaya kepada pengguna. Matlamat utama adalah untuk mengkaji kesan label nutrisi terhadap pemilihan makanan pengguna dan pematuhan label makanan dengan keperluan label Peraturan Makanan 1985. Pengguna yang memahami dan mematuhi label pemakanan akan mempunyai badan yang sihat dan fikiran yang segar. Pengedaran borang soal selidik untuk mengumpul data menunjukkan bahawa responden membaca label makanan dan memahami kepentingan nutrisi pemakanan. Selain itu, majoriti produk makanan di pasaran memenuhi piawaian Peraturan Makanan 1985. Matlamat kajian ini adalah untuk meningkatkan kesedaran pengguna tentang label makanan dan menggalakkan mereka untuk menggunakannya untuk membuat pilihan makanan yang terbaik.

Kata kunci: label makanan, Peraturan Makanan 1985, badan yang sihat, borang soal selidik, meningkatkan kesedaran

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The research study on knowledge of nutrition facts on food labels and their impact on food choices on consumers [P3 Categories] has been completed at Aeon Bandar Dato Onn, Johor Bahru, Johor. The research studies the relationship between consumer knowledge about food labels and their food selections in their daily lives. The importance of knowledge about food labels will help the consumers fulfill their desire to live in good shape. People show a positive attitude toward the food label, but some may get an incomplete visual of the nutrition label (Shine, O'Reilly & O'Sullivan, 1997). The food label has a lot of informative particulars that can lead a person to choose their food wisely, such as nutrition facts that include the number of fats, carbohydrates, protein, and more. A specific logo can help the consumer choose the best product, such as no preservatives, low cholesterol, and natural product logo. With the help of information provided in the food packaging, food producer aims to help the consumer make the right choices and make their product the best among the best by improving their products.

The questionnaire distribution to the consumer in the Johor Bahru area has a great outcome which is 51.7 % of consumers read the food label while 39.4 % of consumers understand the food label. The result shows the sum up between agree and strongly agree. The study shows that consumers' concerns about a healthy lifestyle are increasing nowadays. As stated before, educating ourselves with nutrition knowledge can help us choose the right product suitable for the consumer's daily diet. In a third-world country like Malaysia,

upgrading to a better life needs to start with the country's citizens. Healthy people will help the economy grow by improving their way of thinking and a healthy body. In the modern age, especially in a country at a rapid economic growth phase, a high percentage of people with chronic diseases is faced due to an unbalanced and unhealthy diet (Nugent, 2008). This is because people are too busy with their work and prefer fast food to save time. Adding to the problem, the availability of fast food can be easily accessed at a lower price. Daily consumption of unhealthy food can cause chronic diseases such as heart problems, high cholesterol, and high blood pressure. In order to prevent overwhelming health problems, the food label needs to be used and understandable by the consumer.

Promoting a healthy lifestyle is challenging for the Ministry of Health, but it is the earliest modified able risk factor for people to protect their health (Viola, Bianchi, Croce & Ceretti, 2016). The main aim to improve our health is to reduce the amount of salt and saturated and trans fats intake. At the same time, it increases the intake of fruit and vegetables with the help of exercise. Healthy food may be tasteless and not mouth-watering for some people, but it benefits greatly. This is a fact that cannot be denied.

The outcome of a healthy diet can improve our health and mind. The nutrition gained from the diet can help the body system work well and nourish the cell perfectly. It is a piece of necessary knowledge for the people who need to involve in a specific diet or want to live a healthy lifestyle. Meanwhile, the complete food label is essential to following the Food Registration 1985 requirements to provide the consumer with crucial information. Besides that, the food producer company provides exciting packaging to attract consumers' attention to purchase the product.

1.2 Objective

- 1) To study the impact of nutrition facts on the consumer's food selection.
- 2) To investigate the food label is compliance to the Food Registration 1985 label requirements.

CHAPTER 2

LITERATURE REVIEW

2.1 Food label

Food labels are a complimentary piece of information for every food product. It contains the most crucial information, which is nutrition facts. The nutrition facts have beneficial information that helps the consumers choose the food that leads to a healthy diet (Goyal & Deshmukh, 2018). In the nutrition facts, it must have serving information, calories, nutrients, and percentage of daily values. Moreover, food labels need to follow the requirements that have been set up by the Food Regulation 1985 in the packaging. This information is complementary, so the consumers know every detail about the product they want to buy and consume. The food producer company needs to avoid complex labeling so it will be easy for the consumer to understand the food label (Zhang et.al, 2020).

There is seven (7) basic knowledge for choosing the food product with the help of the nutrition fact. This step can help the consumer make a healthy choice. The first step is to look at the serving size (Klemm, 2022). Usually, serving size is the information that has been ignored because the consumer does not see its importance. Serving size tells the consumer the total number of calories, fats, and other nutrients consumed. With the information, the consumer can control their intake of the food. Next, compare the total calories to individual needs (Klemm, 2022). The requirements of calories differ for every individual. By knowing the total calories in the food product, the consumer can adjust the intake of the calories depending on their preferences.

Furthermore, the percent daily values guide the diet (Klemm, 2022). Percent Daily Values help evaluate the food suitable for the consumer's daily meal plan for the whole day. It is a reference that shows the number of nutrients consumers consume each day without over-consume (U.S. Food and Drug Administration, 2020). Other than that, check out the nutrition terms (Klemm, 2022). The consumer needs to know the minimum and maximum intake of every nutrition, so they do not consume more or less than required. In addition, the consumer needs to choose a product with low saturated fat, added sugar, and sodium (Klemm, 2022). The consumer can observe all of the information in the nutrition facts on the food product.

Moreover, get enough vitamins, minerals, and dietary fiber (Klemm, 2022). The consumer needs to choose a product rich in dietary fiber, potassium, vitamin D, and more. All of this information is also available in the nutrition facts. Lastly, consider the additional nutrients (Klemm, 2022). The additional nutrients can help add on the nutrients lacking in the food product.

The function of the food labels is to provide enough information about the food product. Consumers can choose their food products by looking at the nutrition facts suitable for their diet. Other than that, food labels also provide health and safety information such as allergens that may contain in the food. The person with an allergy needs to be aware of any ingredients available in the food. Usually, the allergen information will be in bold writing to attract the consumer's attention. The common primary allergen in the food product is soy, egg, peanuts, fish, shellfish, and more. Lastly, food labels also help promote the food product by using an exciting illustration with colorful packaging.

The food label is crucial for the food product, and it has many benefits for the people by serving much information that can help with someone's daily diet. Food labels acts as

informative marketing tools, and consumers should pay more attention to the food label information to choose the correct food product.

2.2 Food Regulation 1985

Food regulation 1985 is an act by the Malaysian government that helps the food producer prepare informative and complete food labels. The regulation consists of eleven (11) parts that include particular requirements about the food products that the food producer needs to follow. The eleven (11) parts are part I; preliminary, part II; warranty, IIA; approval for the sale of food obtained through modern technology, III; procedure for taking samples, IV; labeling, V; food additive and added nutrient, VI; packages for food, VII; incidental constituent, VIII; standards and particular labeling requirements for food, IX; use of water, ice or steam, and X; miscellaneous (Food Safety and Quality Division, 2020). The part that will focus on more is part IV, which explains the food label.

In part four (IV) of Food Regulation 1985, the language that should be appeared on the food label is Bahasa Malaysia or English (regulation 10). Bahasa Malaysia is a mother-tongue language in Malaysia, and almost all Malaysians understand it. Using the mother-tongue language can help the senior citizen who does not understand other languages, such as English, read the food label. Meanwhile, English helps overcome the language barrier for a foreigner who lives in Malaysia as English is the second language in Malaysia. Other than that, particulars in labeling (regulation 11). Regulation 11 stated that using the common name to state the food ingredients is essential. By using the common name of the ingredients, the consumer will be alert about what they consume. It is also required for the food producer to state clearly if the food product contains any ingredients that can cause sensitivity to human health and religion, such as alcohol, pork, ingredients that can cause hypersensitivity or any derivatives. Furthermore, the form and manner of labeling (regulation 12). All the information on the food label should appear conspicuously and prominently in the form and

manner of labeling. Doing so will prevent the misunderstanding in consumer perception due to doubtful information.

Moreover, the size and color of letters (regulation 13). The size of the letter used must be easy to read by the consumer, and the color of the letter needs to be different from the background. This will attract the consumer to read the information available on the food label, in regulation 14, date marking. Date marking is crucial information on the food label: the expiry date. Food that exceeds the expiry date should not be eaten. This is because the quality of the food is already being affected. Expired food products can lead to health problems such as diarrhea, abdominal cramps, and vomiting. There are different types of expiry dates on the food product: sell-by date, best-by date, and use-by date (Harvard T.H Chan., 2021). The sell-by date is the last date the seller can display the product on the shelves, while the best-by date is the last recommended product use. Meanwhile, the use-by date is the last date to use for the peak freshness. Next is a statement of the strength of the ingredients (regulation 15). The strength of the ingredients used by the food producers needs to state clearly. Another way to state the strength of the ingredients is by using percent, which means percent by weight, or parts per million which means parts per million by weight. In regulation 16, packing and retail premises emphasize that the food packaging needs to be sealed. This will keep the hygienic environment due to the unexposed food product.

The final regulation is regulation 18; matter is forbidden on any label. Under regulation 18, there are five parts. It started with claims on the label (18A), nutrition labeling (18B), nutrient content claim (18C), comparative nutrient claims (18D), and nutrient function claim (18E). Regulation 18A stated that claims highlighting the absence or non-addition of a particular substance in or to food might be included in the label. The claims must not mislead, such as the label consisting of the common ingredients from the food product or any nutrients content claims. For regulation 18B, nutrition labeling. Nutrition

labeling describes nutrients available in the food, such as energy. Energy needs to be in kilocalorie (kcal), kilojoule (KJ), or both per 100g or 100ml per package. Next, regulation 18C, nutrient content claim. Nutrient content claim is the claim that states the level of nutrients inside the food. Usually, the claims are 'a low in cholesterol food' or 'a sugar-free food'. For regulation 18D, comparative nutrient claims compare the level of energy or nutrient between two or more foods. The term that is usually used is 'extra vitamin'. Last but not least, regulation 18E, nutrient function claim. Nutrient function claim is the claim about the function and effect of the nutrients for our body if we consume the food product. For example, zinc will help in growth while iodine helps form thyroid hormones. It also stated if the product is unsuitable for pregnant women or infants.

Food Regulation 1985 provides the specific requirement in food labeling for the food producer to follow. This will help the consumer receive accurate information about the food they consume. The person who has been found guilty of providing improper labeling can be in prison for not more than three (3) years or will be fined or both (Food Safety and Quality Division, 2012).

2.3 Nutrition on the food label

Chemicals that supply sustenance to our cells are known as nutrients. Proteins, carbohydrates, vitamins, fiber, and other nutrients are only a handful of the many nutrients available. We usually get our nutrients from the food we eat regularly. An imbalanced food intake frequently causes chronic illness. It may inhibit our biological systems from fulfilling their duties, resulting in constipation if we do not eat enough fiber or exhaustion if we do not eat enough carbohydrates. Nutrients are divided into macronutrients and micronutrients (Newman, 2020). The macronutrient is a nutrient that individuals require in large quantities for the system to work properly, whereas the micronutrient is a nutrient that individuals must ingest in small amounts (Newman, 2020). Macroscopic nutrients include carbohydrates, proteins, and lipids.

Carbohydrates can take many different forms. Carbohydrates include sugar, fiber, and starches (Szalay, 2021). It is the essential energy source for the human system to function properly. The daily carbohydrate allowance for a person is 135 grams (Slavin & Carlson 2014). The amount of carbs required varies by person. Pregnant women, like others who need to do vigorous work, require more carbs because sugar is categorized as a carbohydrate, and persons with diabetes must limit their carbohydrates. Proteins are also categorized as macronutrients. Proteins are made up of chemical compounds known as amino acids. Every protein has different side chains that play different roles in different processes. There are 20 amino acids in all, some of which are required and others that are not (Watford & Wu, 2018). Non-essential amino acids are produced naturally by our bodies and derived from our food. Protein aids in the development and repair of cells and tissues and acts as an enzyme to speed up the process. Skin, muscle, bone, organs, and hair are all made up of protein. Seafood, soy products, milk, almonds, and other protein sources are all included. To meet the

Recommended Dietary Allowance (RDA), an adult must consume 0.8 gram of protein per kilogram of body weight per day (Lonnie et al., 2018). A deficiency of protein can lead to malnutrition, anorexia nervosa, and weak muscle (Brazier, 2021).

Aside from that, there are fats. Even though fats are included in the macronutrients, excessive consumption can contribute to obesity, high cholesterol, and liver damage. Fats aid in lubrication of joints, preserving healthy brains, producing hormones, and many other functions (Newman, 2020). Unsaturated and saturated fats are the two types of fats, and in this situation, unsaturated fats are better than saturated fats. At room temperature, saturated fats are solid, but unsaturated fat is liquid (Newman, 2020).

Micronutrients include minerals, vitamins, and antioxidants, to name a few (Newman, 2020). Potassium, sodium, calcium, iron, and other minerals are classified into many groups. Potassium is necessary for the kidneys, muscles, heart, and nerves to operate properly. Adults required 4.7 grams of protein. Sodium regulates fluid levels in the body and maintains neuron and muscle function. An adult's daily salt need is 2.3 grams. Calcium also helps to make bones and teeth stronger. An adult needs 1.0 grams of calcium every day. Last but not least, there is iron. Iron is essential for creating red blood cells, connective tissue, and hormones. An adult needs 0.008 grams of iron per day to avoid anemia.

Vitamins are also included. Vitamins are natural substances that support the immune system, bone health, growth, and other bodily functions. Vitamins are categorized as either fat-soluble or water-soluble (Akram et al., 2004). Vitamins A, D, E, and K are fat-soluble vitamins, while thiamine, riboflavin, niacin, and others are water-soluble vitamins. 8000 to 1000 micrograms per day, 8000 to 5000 micrograms per day, 8 to 10 micrograms per day, and 70 to 140 micrograms per day are needed for fat-soluble vitamins. On the other hand, water-soluble vitamins require 1 milligram per day, 1,2 milligrams per day, 2-2.2 milligrams

per day, 100-200 micrograms per day, and 60 micrograms per day, and 4-7 milligrams per day (Akram et al). (2020). Antioxidants, on the other hand, are beneficial, and antioxidants help the body rid itself of poisons (Newman, 2020).

All the nutrients indicated on the food label help the consumer choose the food product intelligently because each nutrient serves a purpose in our health. Consumers can choose foods depending on their health preferences if they have complete knowledge.

2.4 Consumer behavioural

A consumer is a person who purchases goods or services for their use. The consumer can choose and buy the goods depending on their preference. There are many choices for them at the market to choose what goods are best for them. The main problem will be when consumers do not know what is best for themselves. Every person has their unique diet to keep them healthy; without knowing their own body needs will lead to the wrong consumption of nutrients. The consumer tends to overeat the food that is claimed to be healthy (Kerr et.al, 2015). This matter arises due to misunderstandings about healthy product consumption. Consumers need to take note of their health requirements and improve their knowledge about the importance of nutrients for the consumer's health in the future. The negligence towards this matter can harm the consumer in the long term.

The consumer's negligence towards their health can be due to a lack of knowledge about the food label. People who have difficulty digesting food nutrition information usually do not participate in food nutrition (Zhang et.al, 2020). People only tend to buy food products depending on the well-known brands and mouthwatering taste. The food label on the food product is essential with the help of certain logos such as low cholesterol, high calcium, and more. At least this will help people who do not understand the food label choose the better product. The consumer will choose the healthier product depending on their health with the logos.

Other than that, the lack of time for the consumer to choose the product. Due to the busyness of their work, they tend to choose any available product in the market depending on their brand. Consumer has been busy with their working life that they forget about their body requirement for a healthy body. Especially in developing countries like Malaysia, workers have been busy with their work until they prefer fast food rich in sodium to home-

cooked food rich in healthy nutrients. This unhealthy behavior will lead to chronic diseases like heart disease, high cholesterol, and obesity.

Consumer behavior is the starting point for a healthy body. Ignorance can harm them in the future, and consumer needs to spend their precious time taking extra care of themselves. If the ignorance continues, it will lead to many harmful effects for them physically, emotionally, and mentally.

CHAPTER 3

MATERIAL AND METHOD

3.1 Data and sample

The material used in this study was a self-administered questionnaire paper with closed-ended questions (Darkwa, 2014), 300 supermarket customers (n=300), Statistical Package for Social Science (SPSS) software, and 300 local food labels product (n=300) to study nutrition.

Statistical Package for Social Science (SPSS) is a software that will compare and correlate the result from the self-administered questionnaire in the context of univariate, bivariate, and multivariate analysis for parametric and non-parametric statistical techniques (Puteh & Azman Ong, 2017).