FACTORS ASSOCIATED WITH NUTRITION INFORMATION LABEL READING AMONG STUDENTS IN CHULALONGKORN UNIVERSITY

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ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

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ณัฐพงศ์ สุขทั่วญาติ : ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย (FACTORS ASSOCIATED WITH NUTRITION INFORMATION LABEL READING AMONG STUDENTS IN CHULALONGKORN UNIVERSITY) อ .ที่ปรึกษาวิทยานิพนธ์หลัก: อ. ดร. ณัฏฐา ฐานีพานิชสกุล, 102 หน้า.

การศึกษาวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการอ่านฉลากโภชนาการของนิสิตระดับปริญญาตรี จุฬาลงกรณ์มหาวิทยาลัย โดยการวิจัยครั้งนี้มีการคัดเลือกกลุ่มตัวแทนของนิสิตจำนวน 432 คน โดยใช้วิธีการเลือกตัวอย่างสุ่มแบบง่ายและเลือกตัวอย่างโดยการแบ่งสัดส่วน เครื่องมือที่ใช้ในการศึกษาครั้งนี้คือแบบสอบถามความรู้เกี่ยวกับฉลากโภชนาการ การรับรู้ถึงความสำคัญของปัจจัยของผลิตภัณฑ์อาหาร ทัศนคติเกี่ยวกับประโยชน์ของฉลากโภชนาการ และพฤติกรรมการอ่านฉลากโภชนาการ ผลการศึกษาพบว่ากลุ่มตัวอย่างส่วนใหญ่เป็นชาย 53.9% อายุระหว่าง 19-21 ปี 38% ของกลุ่มตัวอย่างศึกษาอยู่ระดับชั้นปีที่ 2 และยังพบว่า 70% ของกลุ่มตัวอย่าง อ่านวันหมดอายุ แต่อย่างไรก็ตาม 60% ของกลุ่มตัวอย่างมีความรู้ และทัศนคติเกี่ยวกับฉลากโภชนาการของนิสิตอยู่ในระดับ ปานกลาง มีเพียงกลุ่มตัวอย่างจำนวนน้อยที่ยังมีความใส่ใจต่อการอ่านฉลากโภชนาการก่อนตัดสินใจเลือกซื้อสินค้า ขณะที่ 97.5%ของกลุ่มตัวอย่างมีพฤติกรรมการอ่านฉลากที่ต่ำ นอกจากนี้ยังพบว่าระดับทัศนะคติเกี่ยวกับฉลากโภชนาการ มีความสัมพันธ์กับพฤติกรรมการอ่านฉลากโภชนาการอย่างมีนัยสำคัญทางสถิติที่ระดับ (fisher exact = 0.01 , p-value < 0.01) ยิ่งไปกว่านั้น อายุมีความสัมพันธ์เชิงลบกับพฤติกรรมการอ่านฉลากโภชนาการ อย่างมีนัยสำคัญทางสถิติที่ระดับ (r= -0.95 , p-value < 0.05)โดยสรุปการศึกษาครั้งนี้คือการให้นิสิตควรตระหนักถึงการอ่านฉลากโภชนาการ ซึ่งจะมีประโยชน์ต่อการเลือกสินค้าที่ปลอดภัยและมีประโยชน์ต่อตนเอง

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2557 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

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NATAPONG SOOKTOWYAD: FACTORS ASSOCIATED WITH NUTRITION INFORMATION LABEL READING AMONG STUDENTS IN CHULALONGKORN UNIVERSITY. ADVISOR: NUTTA TANEEPANICHSKUL, Ph.D., 102 pp.

The objective of this research was to assess influenced factors related to behavior of reading nutrition information label among undergraduate students in Chulalongkorn University. In this study, 432 students were invited to participate. Proportion to size and simple random sampling was used as sampling method to select participated students. Self-reported questionnaire was accessed students' knowledge and attitude on nutrition information label including their reading behavior. The study found that most of the participants were male (53.9%) aged between 19-21 years old (73.8%) (mean age 20 years ±1.314). Most of them was studying in second year of bachelor's degree (38%). For food label around 70% of undergraduate students reported that they always read expiration date before buying food products. However more than 60% of them had fair knowledge and moderate attitude regarding to nutrition information label. Only few of them paid attention of nutrition information label before buying food product while 97.5% of them had poor behavior on reading behavior. This study also found that students' attitude level on nutrition information label was associated with their reading behavior (fisher exact = 0.01 , p-value < 0.01). In addition, their age was negatively correlated to score of nutrition information reading behavior (r= -0.95 , p-value < 0.05). Finding of this study could be suggested that students should be aware about reading nutrition information. It's useful for students to choose good products and suitable for themself.

Field of Study: Public Health Student's Signature .....

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CHAPTER I

BACKGROUND AND RATIONALE

The food industry is considered a technology that has been continuously developed and has obtained the attention of consumers increasingly because of the competitive society in work and daily life. This has resulted in a rush of general people in the society because there are limitations in terms of time and convenience, as well as there is a change in situation and environment. Therefore, consumers now prefer to consume finished or semi-finished foods in their daily life more and more. The majority of consumers in the country rely on food products which are produced by both industrial and household manufacturers. Entrepreneurs use a variety of marketing strategies to motivate consumers to buy and consume their products. Some of them exaggerate to make consumers believe and buy their products, but the consumers receive products which have poor quality and do not meet their real needs (Wanamongkol, 2001) . In order to resolve these problems, the government has introduced measures to protect and maintain the consumers' rights by legislating the Consumer Protection Act 1979 to achieve fairness for consumers to get products with reasonable price and safe for health. Consumers can look for information on how to buy and consume good products based on their body's needs according to nutrient requirements that should be given on a daily basis for the Thai people (Ministry of Public Health, 2000) .

Nutrition information means the information on the food package which provides the nutrition information such as total energy, total fat, protein, sodium and carbohydrates. It indicates the nutritional information of such food in the form of nutrition information frame which specify the type of nutrients in the amounts that consumers eat at one time. This nutrition label is necessary to have complete, clear and understandable information that can be compared with the consumer

recommendations and can be calculated how much such food contributes the consumption to achieve the recommendations (Sripanyakorn, 1997).

But, what is worrisome is that only few consumers spend their time to observe and read nutrition information attached on food containers before buying. In addition, there are less people to see the value of the information specified on the nutrition labels. At the same time, consumers do not always know that nutrition labels on food containers have to go through the correct legal procedures and detailed message examination so that these nutrition labels show complete information to the consumers to use as a basis for their decision-making and that the government officials can examine the completeness and accuracy in accordance with the requirements stipulated by the Ministry of Public Health (Ministry of Public Health, 2000).

Good information on the nutrition label, combined with technical knowledge on food and nutrition, can help people to recognize the origins of food products in terms of raw materials, production process, value of price, and safety to consume these products (Jawasit 1995). The nutrition information is therefore important in presenting the ingredients or nutrients of such food and in comparing the proportion per the amount of nutrients that the body should get each day. Read these nutrition information can help consumers to make their purchasing decisions of finished food products appropriate with the conditions and needs of their body (Tantisorranot K., 1997). Especially teens, most of the populations are between the ages of 16-20 years old. Teens are the age with developmental sequence of progressive change in both whole body and all organs which occur as a result of maturity and experience. (Waitayangkul, 2005).

In 1997, (Pongjarusatit, 1997) studied the buying habits of food products and information factors that affect the pre-purchase information seeking of the consumers in Bangkok. The study found that nearly 50 percent of consumers thought it was important to find the products before buying because of the desire of quality products more than any other reasons.

In 2001, (Wanamongkol, 2001) studied the reading of information on nutrition labels and the use of label information in making a purchasing decision of ready-to-drink milk products among the consumers aged 20-60 years in Bangkok. The analysis found that 85.5 percent of the sample read the information on date, month and year of expiration every time. The study also indicated that reading the information on the label is associated with the use of information on the labels in making a purchasing decision of ready-to-drink milk products.

Currently, it is found that the information on food labels is increasing but only few consumers are interested in reading it. Reading the information on nutrition labels is more useful to consumers. Therefore, the researcher is interested to study the factors that affect the reading behavior of nutrition labels among the students in Chulalongkorn University. These students have been selected from across the country and most of them are teens. Some of them need to live in dormitories and most of them stay in the apartments situated in Bangkok where there are many convenience stores to buy various forms of food products, especially finished foods because of their ease, various types and long shelf-life. The information on nutrition labels is essential that these students should read before deciding to buy.

1.1 Research Questions

1. What're the level of knowledge, attitude and reading behavior regarding to nutrition information among undergraduate students in Chulalongkorn University?

2. Is the knowledge of nutrition information associated with the behavior of reading nutrition information among undergraduate students in Chulalongkorn University?

3. Is the attitude of nutrition information associated with the behavior of reading nutrition information among undergraduate students in Chulalongkorn University?

1.2 Research Hypothesis

1. Knowledge of nutrition information is associated with reading nutrition information behavior among undergraduate students in Chulalongkorn University.

2. Nutrition information attitude is associated with reading nutrition information behavior among undergraduate students in Chulalongkorn University.

1.3 Research Objectives

General objective

To assess influenced factors related to behavior of reading nutrition information among undergraduate students in Chulalongkorn University.

Specific objectives

1. To assess the knowledge level of nutrition information, attitude level of nutrition information and the level of behavior regarding to nutrition information among Chulalongkorn University student.

2. To find an association between knowledge of nutrition information and behavior of reading nutrition information among undergraduate students in Chulalongkorn University .

3. To find an association between attitude of nutrition information and behavior of reading nutrition information among undergraduate students in Chulalongkorn University.

1.4 Conceptual Framework

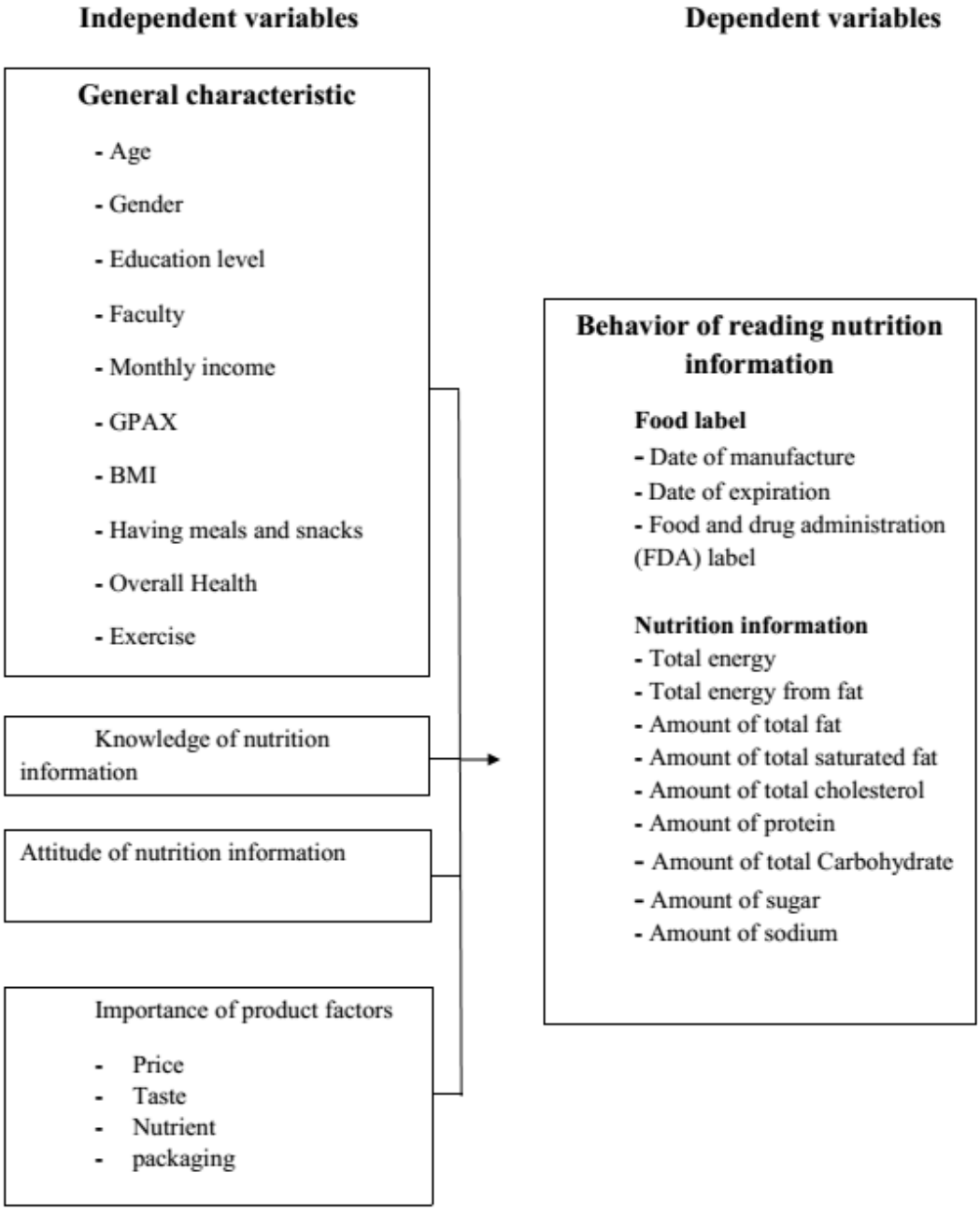

Figure 1 Conceptual Framework

1.5 Operation Definitions

General characteristic

1. Age refers to the number of years that someone has lived.

2. Gender refers to male and female.

3. Education level refers to the highest year of education of the undergraduate students in Chulalongkorn University.

5. Monthly income means an amount of income which is given by student's parent in each month.

6. GPAX means an average grade earned by a student in last term.

7. Body mass index (BMI) refers to a number calculated from a person's weight and height.

BMI Categories:

Underweight = below18.5

Normal weight = 18.5–24.9

Overweight = 25–29.9

Obesity = 30.0 and above

8. Having meal refer to a number of the regular meal which is had normally by the students in each day.

The regular meal is divided into 3 times per day which are breakfast, lunch and dinner.

9. Having snacks refer to the number of having times of snack in each day. Snacks is a small amount of food which had between each meal.

10. Overall Health is overall state of physical or body wellness which will be indicated by student's assessment.

11. Exercise means the frequency of exercise in each week. Student's behavior regarding to body moving and walk such as jogging, swimming, cycling etc. The exercise should be carried out about 30 minutes for 3-5 times a week.

12. Nutrition information means the information on the food package which provides the nutrition information such as total energy, total fat, protein, carbohydrates, and sodium.

13. Perception of nutrition information refers to perceptions and beliefs about the use of products. The products are provided consistent information to the consumer to understandable, and usable labels that can help them make healthy food choices.

14. Behavior of reading nutrition information means the frequency of reading nutrition information on food product before purchasing. There are the information on product such as serving size, amount per serving, total energy, amount of total fat, amount of protein and amount of total carbohydrate etc.

15. Important of product factors refers to the various qualities of product to be considered before buying. Products which are 4 important factors such as price, taste, nutrient and packaging.

16. Chulalongkorn student means undergraduate students who are studying in Chulalongkorn University in 2013.

CHAPTER II

LITERATURE REVIEW

The research will focus on the association between knowledge of nutrition information, attitude of nutrition information and behavior of reading nutrition information in Chulalongkorn University students. This chapter present the concept relevant to nutrition information as follows:

2.1 The Concepts about nutrition information

2.1.1 The meaning of nutrition information

2.2.2 Nutrition information in Thailand

2.1.3 Reading nutrition information

2.2 Attitude of nutrition information

2.2.1 The meaning of attitude

2.2.2 Perceived importance of product factors

2.2.3 Factors of the consumer attitude

2.3 Behavior of consumer

2.3.1 The meaning of consumer

2.3.2 Factors of consumer behavior

2.4 The Health Belief Model

2.5 Related researches

2.1 The Concepts about nutrition information

2.1.1 The meaning of nutrition information

Nutrition information means what allows the consumers to know the detailed information attached to the food containers in order to consider in making a purchasing decision and consuming foods to get the right amount that meets the need of their body (Ministry of Public Health, 2000).

(Sripanyakorn, 1997) defines nutrition information as a typical food label made from paper or anything else that presents the message about the product on the product itself or container or that is inserted or included with the product, as well as the document, manual or sign installed or displayed on the products. These labels must contain the name and address of the manufacturer, date of manufacture, and net weight, etc., and indicate the nutritional information of such food in the form of nutrition information frame which specify the type of nutrients in the amounts that consumers eat at one time and the percentage of the amounts in one day, including the nutritional information recommended by the Bureau of Food and Drug Administration. (Food and Drug Administration, 2003)

Nutrition information refers to a general food but it shows the nutrition information of that food in the frame called nutrition information frame. This information includes the types and amounts of nutrients as well as the amounts after being compared as the percentage of the amounts of nutrients that should be taken per day and the calculation of energy that will be obtained from foods (Publication and Advertisement Control Division, 2003).

Nutrition information is a typical food label that must contain the name and address of the manufacturer, date of manufacture, and net weight, etc., and indicate the nutritional information of such food in the form of nutrition information frame which specify the type and amounts of nutrients as percentage of the amounts of nutrients that are recommended to consume daily for Thai people aged 6 years and

above (Thai Recommended Daily Intakes; Thai RDI) in which it provides that the daily energy demand rate is 2,000 kcal.

2.1.2 Nutrition information in Thailand

Nutrition information in Thailand began in 1969. The committee of the National Women's Council under the Royal Patronage of Her Majesty the Queen established the first Consumer Association in Thailand and it had been continually developed. Later, the Consumer Protection Board thought the scope of this association should be extended. The Consumer Protection Act was then legislated and enforced in 1979 so that the consumers consumed quality, clean and safe foods (Kasemsan, 1992).

Indicating a nutrition information according to the notification of the Ministry of Public Health No. 182, 1998, on Nutrition Information, is voluntary for all foods in general, but the foods referred to shall be forced to show its nutrition information.

Nutrition information required to be shown on nutrition information includes:

1. Total amount of energy and amount of energy obtained from fat.

2. Carbohydrate, fat and protein which are energy-generated nutrients.

3. Vitamins and minerals that are now significant towards the nutritional status of Thai people: vitamin A, vitamin B1, calcium and iron.

4. Nutrients to be careful not to eat too much: sugar, saturated fats and cholesterol.

5. Nutrients that are beneficial to the digestive tract system: dietary fiber.

6. Nutrients that are added to foods such as vitamin C.

7. Nutrients referred to; for example, if “Iodine” is specified, it is a nutrient that must also be indicated in the nutrition information frame.

The information that is not mandatory, such as other vitamins and minerals, can be put in the labels but it must be specified following the iron and be arranged by the amount of descending.(Kasemsan, 1992)

There are two types of showing the nutrition information frame as follows: 1. Full nutrition information frame must indicate 15 mandatory nutrients: total energy, energy from fat, total fat, saturated fat, cholesterol, protein, total carbohydrate, dietary fiber, sugar, sodium, vitamin A, vitamin B1, vitamin B2, calcium, and iron (Fig. 2).

Nutrition information One consumer unit: ..... (.....) The number of units consumed per ..... : .....
Nutritional value per unit consumed All energy ..... Kcal (Energy from the fat ..... kcal)
Per cent of the recommended volume per day* Total fat ..... g ..... % Saturated fats ..... g ..... % Cholesterol ..... mg ..... % Protein ..... g All carbohydrates ..... g Dietary fiber ..... g Sugar .....g Sodium ..... mg
Per cent of the recommended volume per day* Vitamin A ..... % Vitamin B1 ..... % Vitamin B2 ..... % Calcium ..... % Iron ..... %
* Per cent of the recommended macronutrients intake per day for Thai people, age 6. Years (Thai RDI) based energy requirements 2000 kcal/day.

The power requirement of each person differs from those of energy per day, 2000 kcal should get various nutrients are as follows:	
Total fat	less than 65 g
Saturated fats	less than 20 g
Cholesterol	less than 300 mg
All carbohydrates	300 g
Dietary fiber	25 g
Sodium	less than 2,400 mg
Energy (kcal) per gram : Fat = 9; Protein = 4 ; carbohydrates = 4	

Figure 2 Full nutrition information frame

2. Simplified nutrition information frame is usable if such food contains 8 of 15 mandatory nutrients as mentioned above in very small quantities, but it must at least indicate 6 nutrition: total energy, total fat, protein, total carbohydrate, total sugar and sodium, although its amount is zero (Figure 3).

Nutrition information One consumer unit: ..... (.....) The number of units consumed per ..... : .....
Nutritional value per unit consumed All energy ..... Kcal (Energy from the fat ..... kcal)
Per cent of the recommended volume per day* Total fat ..... g ..... % Protein ..... g All carbohydrates ..... g ..... % Sugar .....g Sodium ..... mg ..... %
* Per cent of the recommended macronutrients intake per day for Thai people, age 6. Years (Thai RDI) based energy requirements 2000 kcal/day.

Figure 3 Simplified nutrition information frame

2.1.3 Reading nutrition information

Reading a nutrition information means the reading of information specified in the nutrition information frame to understand and consider in making a purchasing or consuming decision that meets the consumer's needs and is beneficial to oneself. This includes the following nutrition information:

1. Serving Size means the amount that one normal person consumes such type of food at one time, or “each consumption”, which is recommended by the manufacturer. Taking this amount as recommended, the consumer will get nutrients as indicated in the following range of the nutrition information frame. There are two parts presented: the amount that can be easily seen, such as can, piece, cup or glass, etc. and the weight or volume in metric system; for example, if one normal person drinks one 200-ml box of milk each, one serving size is one bag (200 ml).

2. Servings per Container means how many times this package, box or bottle of product can be consumed; for example, if the food in a 200-g container is consumed one time for 100 g, it means that its Servings Per Container is 2.

3. Nutritional Value Per Serving means one time of consumption in the amount specified that what nutrients the body can get, how much the actual weight is, and what percentage of the amount that should be taken on day one. For vitamins and minerals, this nutritional value is only indicated as percentage of the recommended amount per day without the actual amount because the demand for these nutrients is very low and a variety of units are usually used which may cause confusion to consumers, and therefore specifying as percentage of the body's needs is easier to understand.

4. Percent of the recommended amount per day means the nutrients in the food from one time of consumption, that is to say, when compared to the amount that should be taken on one day, what proportion or percentage that should be taken per day. For the energy, it is compared for the people who need energy volume of 2,000 kcal, i.e. moderately hard work. For example, one serving of canned lychee is four fruits and syrup which can provide 25 grams of carbohydrate. It is recommended to consume 300 grams of carbohydrate each day. When compared, consuming four fruits of lychee and syrup only gets carbohydrate accounted for 8% of the recommended amount per day. This means we need to consume carbohydrate from other foods for 92%. For protein and sugar, they are not required to be shown as percentage because there are several types of protein. Some are high-quality proteins, such as milk or meat proteins,

while some are high-quality proteins, such as ligament or skin proteins. Therefore, if they are specified as percentage, it may be misleading and so it is required to be shown as gram. If the consumer wants to know what source of food the protein comes from, he or she will see the ingredients on the label. For sugar, it is part of carbohydrate which is already expressed as percentage and therefore it is shown as gram of weight only.

Thai RDI refers to the percentage of the recommended nutrient intake per day for the Thai people aged 6 years and above (Thai Recommended Daily Intakes or Thai RDI) which is calculated from the energy need of 2,000 kcal per day.

2.2 Perception of nutrition information

2.2.1 The meaning of attitude

(Lomchawakarn, 2007) describes that the attitude of a process by which human selects and receives a message which is a stimulus, arranges such message as category, and interprets such stimulus that affects their senses into the meaning as seen. The attitude occurs in the mind of consumers which is associated with the idea, such as like or dislike which is based on the images in the brain in their memory.

Attitude is a process of translation or interpretation of stimuli or information via various sensory organs, i.e. eyes, ears, nose, tongue and body, into the brain in the form of electricity and chemistry. The brain then interprets such stimuli or information by comparing with previous experience (Educational Technology Club, 2007).

(Wongmutha, 1999) defines attitude as a process by which human selects, receives and interprets anything they get involved in order to create a visual image in the brain that is meaningful and harmonious.

2.2.2 Perceived importance of product factors

1. Price in the same category of products, the consumer often considers whether the price is appropriate to those products and notices based on the quality of the products. Typically, expensive products have better quality than cheaper products.
2. Taste is a factor that has a strong influence on buying food products and consumer

acceptance. Whether this acceptance occurs or not, the consumer will compare the new products with the old ones by using the taste of the original products are a standard of comparison (Sanlier, 2009).

3. Nutrients are substances obtained from foods in which when they are taken into the body, they will be utilized by different parts of the body such as providing energy for living and serving as components of the tissues in the body. The consumers usually choose foods that provide beneficial nutrients to their body by considering the information in the nutrition label whether it consists of the nutrients they need.

4. Packaging in a new type of promotion that is currently popular for products that are being put out for sale and can promote the sale for the entrepreneurs. The products may be original ones but their exterior appearance just changes.

2.2.3 Factors of the consumer attitude

Factors influencing the attitude of consumers as described by (Wongmutha, 1999) are as follows:

1. Technical factors include:

1.1 Size: Cconsumers often perceive that a large product is more expensive and better quality than the smaller one.

1.2 Color is indicative of the personality of the individual; for example, red means heat and excitement, green means safety and nature, and blue means faith in authority and duty. Primary colors, i.e. red, green and blue, are often not used with a high-level product because these colors give the impression that the product is in the low level. High-level products often use these primary colors combined with other colors and avoid the use of primary colors.

1.3 Intensity refers to the intensity of advertising which is represented by the times and frequency of the advertising of the organization.

1.4 Movement is mainly a television advertising to incentivize the exposure and interest in the information.

1.5 Position of the brand can be seen from the brand which is an advertising sponsor.

1.6 Contrast aims to make a difference from competitors or others.

1.7 Isolation is always special. It can be observed that the products with sale promotion are not put in the normal shelves, but they are displayed in a specially isolated location. This is because if the same types of products are arranged on the same normal shelves, their sale promotion is unknown.

1.8 Perceptual fixation is a memory to look as that manner and is involved with the image. The first launching of a new product will need to create a good image, and if the image is not good, it will be very difficult to improve later.

1.9 Perceptual habit of the individual includes both pessimism and optimism. It can be seen that the same matter may be differently seen because it depends on the perceptual habit of each individual.

1.10 Confidence and caution mean self-confidence or distrust.

1.11 Attention can be both with and without carefulness which results in different views. Those who pay attention with carefulness will see every detail but those who pay attention without carefulness will not see those things.

2. Mental set or track of mind of the consumers refers to what and how they look for, which includes:

2.1 Familiarity can create the admiration.

2.2 Expectation is the expectation of the individual towards anything.

2.3 Past experience of the consumers. For example, someone is rooted in some brands and when they see such brands, they will not require much consideration and decide to buy these products immediately. Although their boxes are changed, some products are not well sold because the consumers are not satisfied with them. Past experience is important because consumers often use the products based on the word of mouth and good service.

2.4 If mood (psychological readiness) is not ready, there will be no any effect. Products being sold when the customer is in a bad emotional state cannot be sold. Good emotions can be created by light, sound, music and time, etc.

3. Social and cultural factors of consumer perception are important and the good marketers must learn the culture of that society because different societies have different cultures.

Important concepts on the selection of perception as mentioned by (Wongmutha, 1999) are as follows:

1. Selective exposure: a receiver selects and reads a newspaper and selects a TV channel or radio frequency, etc.

2. Selective attention: once passing the first filter, the second filter is found. The selective attention towards the stimuli will occur when consumers choose to voluntarily receive any stimulus.

3. Selective interpretation: after selection of watching or listening, then consumers will choose to interpret as they understand. This interpretation is considered the most important step because it can make the consumers look and understand what it is. The interpretation depends on the attitudes, ideas, trust and experiences.

4. Selective retention: this occurs in the memory after properly interpreting the product and knowing how useful such product is.

5. Perceptual defense: it is a defense mechanism. In seeing a thing, the consumer sometimes needs to protect oneself from the pain such as seeking a reason for the replacement.

6. Perceptual blocking: the consumers will protect and prevent various stimuli from entering into their conscious perception. The research indicates that people who buy any brand of product like to read the ads of such brand and do not like to read the ads of competitive products. When reading the ads of their favorite brand, they will be proud, but when reading the ads of other brands, they may find some distasteful messages. In addition, the brain of consumers consists of what comes before or what

human accumulates in their brain, such as knowledge, beliefs, attitudes and experiences which will act as a screening machine to which consumers will choose things to pass or not pass into their brain.

2.3 Behavior of consumer

2.3.1 Meaning of consumer

Behavior of consumer refers to the decision process and physical activities that people do when they evaluate, acquire, use or consume goods and services.

Behavior of consumer refers to the behavior of people in searching, purchasing, using, evaluating and disposing goods and services with an expectation that these goods and services can meet their needs. Behavior of consumer refers to the decision making process and the characteristics of the individual's activities in evaluating, acquiring, using and disposing goods and services.

It can be concluded that the behavior of consumer refers to the decision process or behavior of purchasing, using and evaluating the use of goods or services of a person which is particularly important for the purchase of goods and services both now and future. In general, there are always causes for the occurrence of human behavior. These causes will motivate the needs of behavior based on a process called "the process of behavior " as follows:

1) Behavior is cause: The actual cause is one's own needs.

2) Behavior is motivated: The need to achieve objectives motivates many behaviors to respond to such need.

3) Behavior is goal-directed: people who expose their behavior aims towards certain targets in order to meet their needs.

2.3.2 Factors of consumer behavior

Factors that influence the decision of consumers are divided into two aspects as follows:

1. Internal factors include needs, wants, desires, motivation, personality, attitudes, perception and learning which are created by the individual in terms of idea and expression. They are based on the following circumstances:

1) Needs, wants and desires are collectively and mainly called as “need”. The need in anything of an individual is the beginning of the demand for goods or services. Human's need (consumer's need) is a basis for new marketing strategy in which the business must be able to determine and meet the unfulfilled needs of consumers.

2) Motive is important that we must study the needs and ideas of consumers in order to create incentives for consumers to buy goods or services.

3) Personality is a person's overall characters developed from the person's long-term ideas, beliefs, habits and various incentives which are expressed in various aspects and differently affect the patterns of reactions of each individual. This is a constant response towards environmental stimuli.

4) Attitude refers to the assessment of the person's feelings or opinions towards anything. It can affect the behavior of individuals, so when we want individuals to make any change in their behavior we must try to change their attitude first.

5) Perception is the process of an individual to accept the ideas or actions of others.

6) Learning is the change in a person's behavior created by his or her perception and experience.

2. External factors include economy, family, society, culture, business contact and environment. They are factors arising from the environment around the individuals that influence towards the ideas and behavior of consumers as follows:

1) Economy determines the purchasing power of consumers.

2) Different families result in different habits of individuals.

3) Society around individuals affects the orientation of individuals' behavior into the same direction as of the society to be accepted as part of it.

4) Culture is the way of life that the society believes it is good and acceptable in order the society to proceed and develop well.

5) Business contact refers to the likelihood that consumers will be exposed to the services or goods. Consumers will be familiar with any product that they know and often see and therefore they trust and are willing to use such product. The more exposure of a person is created, the more benefit occurs.

6) The change in general environment affects the purchasing decision of consumers as well.

2.4 The Health Belief Model

The Health Belief Model (HBM) is a psychological method for predicting and describing health behaviors by focusing on personal attitudes and beliefs through the examination of perceptions and attitudes towards disease and negative action outcomes. The HBM was first developed by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services in the 1950s since the free tuberculosis (TB) health screening program was failing. Furthermore, the HBM has been adapted to explore various health behaviors both long-term and short-term, including gender risk behaviors and also HIV/AIDS transmission (Glanz, Rimer, & Lewis, 2002).

The HBM is an intrapersonal theory which uses the combination of individual, knowledge and beliefs for health promotion to generate interventions and prevention programs. The HBM assumes that behaviors are changed by three ideas at the same time (Becker, 1974):

Perceived susceptibility and severity: an individual recognizes the adequate reasons for making their health a concern; It is operative more in the personality or attitudinal spheres of an individual, indicating that his/her perception of personal susceptibility may result in both denial and acceptance of the susceptibility.

Perceived threat and perceived benefits and barriers: people realize a disease or negative health outcome is the result from weakness; personal belief that behavior change will have more benefits than any costs of doing so.and

Perceive of seriousness: Perceived seriousness of a given health condition also operates at the psychological level and is demonstrated though an individual's attitude or behavior. The seriousness can be measured by the outcome of a disease in an individual's life and how he/she is responding to the outcome in his/her life.

The HBM is a simultaneous process about healthy behavior to predict individual health-related behavior and motivating risk-prone individuals, to avoid developing the negative health outcomes. If one has perceived susceptibility and the disease is severe, then it is necessary to feel threatened by these perceptions. Environmental factors may include a sports campaign, television advertising or caring relatives. The advantage of changing one's behavior should be compared to the behavioral barriers to change so as to decide whether to take action (Becker, Radius, & Rosenstock, 1978). Thus, this theory supports decision-making based on personal socio-economic-demographic characteristics and interrelationships (V. L. Champion, 1984).

Conceptual of Health Belief Model

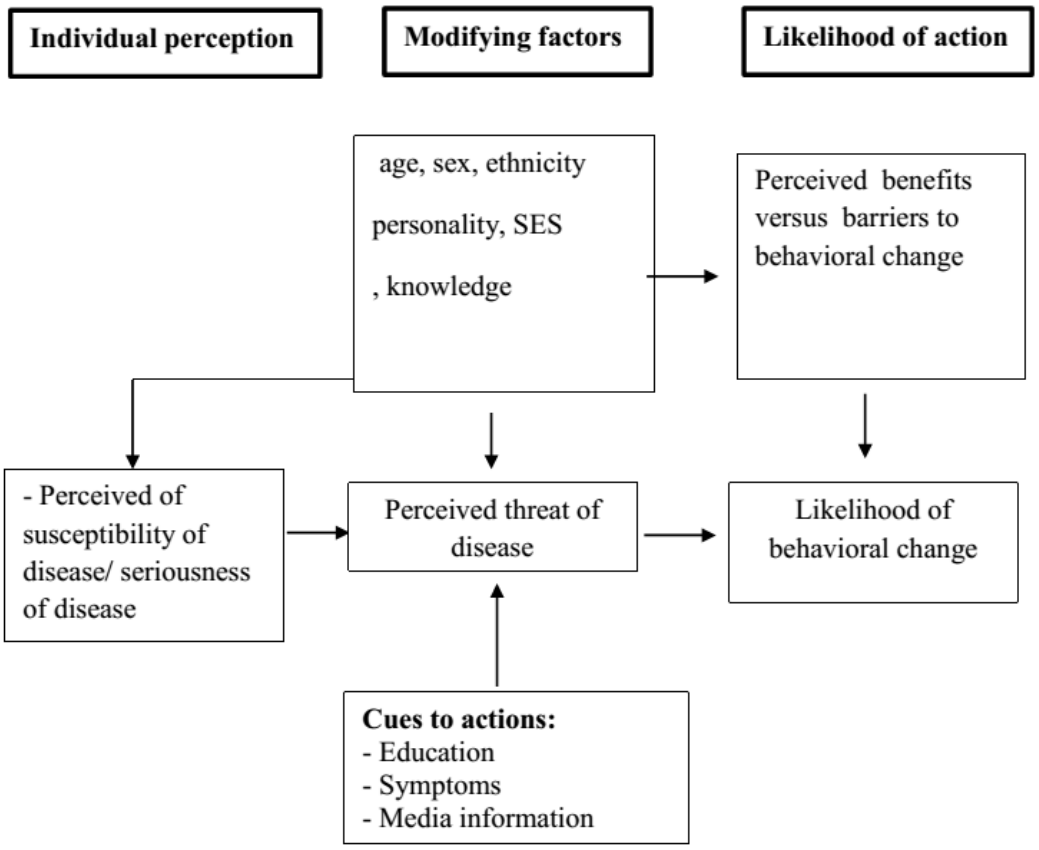

Figure 4 Conceptual framework (based on the health belief model) (Glanz, Marcus Lewis, & Rimer, 1997; Glanz et al., 2002)

A meta-analysis explored 18 studies to determine whether health behaviors over time could be predicted by the original four HBM constructs (perceived susceptibility, severity, benefits and barriers), and evaluated which constructs were the most predictive of health behaviors. Perceived susceptibility was found to be the weakest predictor of behavior, followed by perceived severity; while perceived benefits and barriers were the strongest predictors of behavior. The study recommended that HBMs which measure direct effects of each construct be discontinued (Carpenter, 2010)

Related study HBM and nutrition

A study examined the effects of a nutrition education program based on the Health Belief Model (HBM) on knowledge, attitude, and practice (KAP) of dietary calcium in female students. This interventional study recruited 188 students which placed into intervention (95) and control (93) groups. The intervention group participated in a nutrition education program. Both of groups completed KAP and food frequency questionnaire (FFQ) at baseline and after two and three months of follow-up respectively. Those who received the intervention were found to have better attitude and practice scores compared to the controls. They differ significantly higher. The findings support the effectiveness of nutrition education based on the HBM in improving the knowledge, attitude, and practice relating to calcium intake among adolescent students (Naghashpour, Shakerinejad, Lourizadeh, Hajinajaf, & Jarvandi, 2014).

A research was conducted to evaluate the hypothesis that a learner-centered educational intervention based on the Health Belief Model (HBM) will successfully increase knowledge and consumption of folate-rich foods, while increasing positive beliefs about folate and health. Instead, focus should be on the possible moderators of variables that may influence each construct. The results of this study indicate that a folate intervention positively significant to increases knowledge about folate and health, but does not increase consumption of folate-rich foods. Moreover, the intervention increased self-efficacy and perceived susceptibility according to the Health Belief Model, but no significant effect on perceived benefits, barriers, severity or cues to action were found (LaBrosse, 2011).

A study by Wardle *et al* (Wardle, Parmenter, & Waller, 2000) investigated the factors related to food intake by using the HBM model. This was a postal survey of 18–75-year-old participants selected from General Practitioners' lists in UK. Nutrition knowledge was significantly associated with 'healthy eating' (e.g., fruit and vegetable intakes), knowledgeable individuals were 25 times more likely to consume adequate amounts of fruit and vegetables daily. The analyses of covariance yielded that nutrition knowledge was a partial mediator of the socio-demographic variation in

food intake (especially fruit and vegetable intakes). This study also explained the ways in which social class differences influence health. Social economic, cultural and psychological variables such as 'powerlessness' appear to be important predictors of health and disease states. Similarly, a study by the USDA's Economic Research Service18 shows the quality diets of children's was related significantly the mother's knowledge on food and nutrition (Worsley, 2002).

A telephone interviewed study conducted in US to investigate the behavior on food label package. The author proposed that knowledge, perceived diet effectiveness, health status, and skepticism toward claims are all hypothesized to be significant in predicting the use of package claims and nutrition labels. Results from a preliminary investigation of the relationships among these constructs noted that a perception of how effective diet is in the fight against disease is related positively to the use of nutrition information label and package claims. In addition, diet-disease knowledge is related positively to the use of package nutrition information in the forms of both package claims and nutrition label information. Finally, being at risk for a diet related disease is related positively to knowledge about the dietary links to the disease (Szykman, Bloom, & Levy, 1997).

The findings suggest that consumers may use information to make decisions, even though they may be uncertain of it. If there are no alternate sources of desired information, consumers simply use the information that is available to them, even if they are not completely sure that the information is accurate. Accordingly, the claim on the food packages should be appropriate, even though sometimes it is not easy to verify (Szykman et al., 1997).

A non-probability sample that was provided with three nutrition label treatments and surveyed to determine the labels' effect on accuracy in dietary judgments and nutrition evaluations, level of certainty and confusion while completing those tasks, and perceived label comprehension and utility. Presence of a nutrition label had a positive association with all the dependent measures, while the addition of percent daily values to the label had a non-significant increase in accuracy but a negative effect on confusion and comprehension (Lowe, 2012).

Some studies an influence of consumers using menu labels and that the label is having mixed results on changing food purchases. It was found that consumers not only need to be aware of the label before they can intend to use it, but they must also understand it before their intention can have any real meaning (Jacoby, Chestnut, & Silberman, 1977; Pulos & Leng, 2010).

2.5 Related researches

(Sukjan, 2003) studied the knowledge of the nutrition information of graduate students, Faculty of Education, Chiang Mai University. The sample included 208 students. The tool used in the study was knowledge test. The results showed that the 54.33%, 35.10% and 10.57% of the students have knowledge of nutrition information in high, middle and low levels, respectively. There was a correlation found between the level of knowledge and age groups (P = 0.044) and the relationship between the knowledge (P = 0.002), but there was no correlation between the knowledge and genders. 66.35% of the students always read a nutrition information before buying. These students also suggested that there should be strict laws for the use of nutrition information and regular campaigns so that consumers see the importance of using nutrition information which should be indicated by readable and understandable language.

In 1997, (Sripanyakorn, 1997) studied the patterns of nutrition information that are appropriate to the consumers who are students aged 15-19 years in Bangkok. The conclusion was that a nutrition label that indicates percentage of the amount recommended for daily consumption and nutrient contents as texts could make the readers understand most easily. The most appropriate label should not have too much information because it would make consumers confused and waste of their time to understand the information on the label. In addition, a good label should not have too little information that was not enough and could not be understood. If the details of nutrient contents were indicated, there should also be details of the nutrients as recommended.

(Rothman, 2006) studied the understanding of patients towards nutrition information during 2004 – 2005, and found that most of the sample (89%) used a nutrition information and that income, education , ability to read, and ability to understand mathematics were correlated with the use of information on nutrition labels ($p < 0.001$). In addition, they found that the sample was confused and lacked of understanding in comparing the information on nutrition labels, especially information on one serving. Moreover, they found that the sample was patients with a chronic disease, including diabetes, high blood pressure, stroke, heart failure and hypercholesterolemia, in which these medical conditions were correlated with the use of information on nutrition labels.

(Krukowski RA, 2006) studied the knowledge and understanding of the consumers in reading an energy label shown in the menu of the restaurants. They found that 48-66% of the students and general people read an energy label and 64-73% could read the label and understand the energy that should be taken, while 44-57% did not care to read, even the information was provided.

CHAPTER III

Research Methodology

3.1 Research Design

This study was a cross-sectional study, conducted during March – April 2014, designed to assess influenced factors related to behavior of reading nutrition information among undergraduate students who were studying in 2013 between the age 17-24 as it related to general characteristics, perceived important of product factors and attitude about the usefulness of nutrition information in Chulalongkorn University.

3.2 Study Area

This study was conducted in Chulalongkorn University, Bangkok, Thailand.

3.3 Study Population

Target populations were undergraduate students who were studying in Chulalongkorn University in academic year 2013.

3.4 Sample size and sample technique

The sample size was calculated by using an equation as follow; (Yamane, 1967)

$$\boldsymbol{n = \frac{N}{1 + Ne2}}$$

n is the sample size

N is the total population size

Total number of undergraduate students who are studying in Chulalongkorn University in 2013 is 21,830 students. (Office of the registrar, 2013)

e is the level of precision (0.05)

The error is assumed at 5%. The sample size is **392**± 10% ~ 432 samples

3.5 Data collection

1.There are 19 faculties for undergraduate courses. The total number of undergraduate students is 21,830 persons. In this study, only 432 students was invited to participate.

2.. The researcher selected the samples by the proportion to size technique for sample size calculation for each faculty. Thus, 432 students in undergraduate students were selected randomly as the participants in this study.

3. Data was collected by researcher and assistants and was rechecked by the researcher to prevent inaccuracy.

Totally, 432 questionnaires were responded from undergraduate student in the university (respond rate: 98.63%). Participants were selected by a sampling method in figure 5.

Table 1 Number of the sample size

Faculties	Total students (%)	Total samples
1. Faculty of Education	2,008 (2%)	40
2. Faculty of dentistry	800 (2%)	16
3. Faculty of Communication Arts	625 (2%)	13
4. Faculty of Pharmaceutical Sciences	824 (2%)	16
5. Faculty of Psychology	351 (2%)	7
6. Faculty of Law	1,310 (2%)	26
7. The office of the commission on Agricultural Resource Education	177 (2%)	4
8. Faculty of Medicine	1,842 (2%)	37
9. Faculty of Political Science	1,025 (5%)	21
10. Faculty of Sport Science and Health	481 (2%)	10
11. Faculty of Fine and Applied Arts	537 (2%)	11
12. Faculty of Architecture	1,056 (2%)	21
13. Faculty of Veterinary Medicine	682 (2%)	14
14. Faculty of Commerce and Accountancy	2,217 (2%)	44
15. Faculty of Science	2,486 (2%)	50
16. Faculty of Engineering	2,825 (2%)	57
17. Faculty of Economics	618 (2%)	12
18. Faculty of Allied Health Sciences	747 (2%)	15
19. Faculty of Art	1,219 (2%)	24
total	21,830 (100%)	438

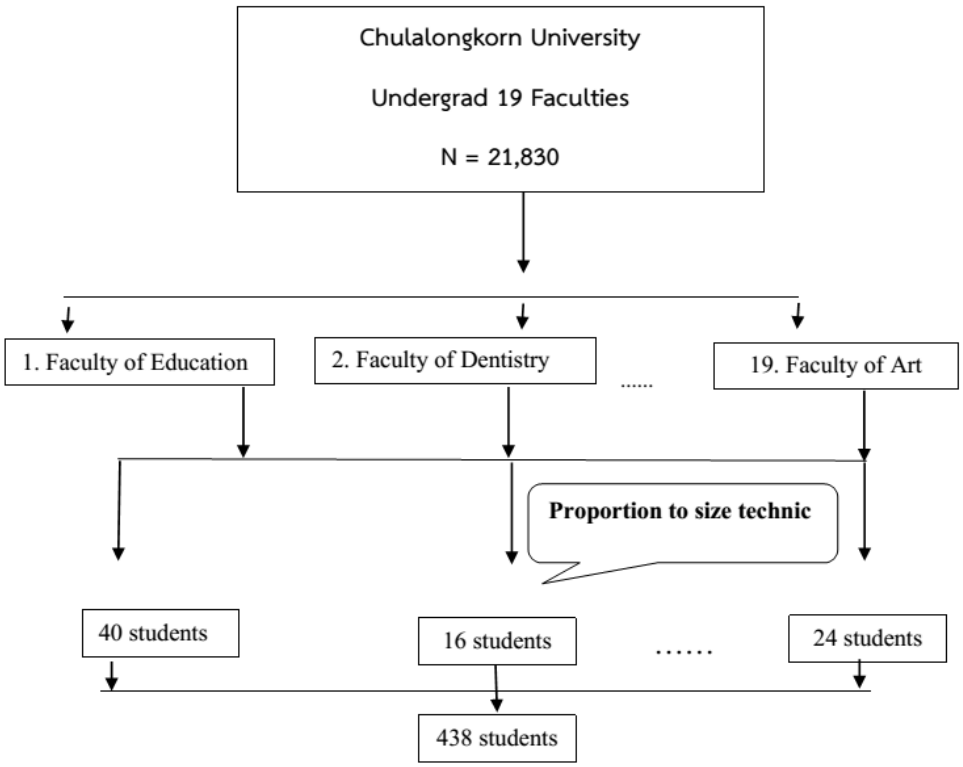

Figure 5 Samples by the proportion to size technique

3.6 Inclusion and Exclusion

Inclusion Criteria

1. Students who were studying in undergraduate students in Chulalongkorn University in 2013.

2. Willing to participate

Exclusion Criteria

1. Blindness

2. Food allergy student

3. Foreigner student / Exchange student

4. Students who were intermission leave during the study period.

3.7 Measurement Tools

The questionnaire in this study was developed from previous studies, consisted of 5 parts:

Part 1: General information and Personal behavior (12 items)

General information consisted of general characteristics which includes: gender, age, BMI, level of education, faculty GPA and monthly income.

Personal behavior includes meals, overall health, exercise and food allergy.

Part 2: Knowledge of nutrition information (5 items)

The purpose of this part was to assess the level of student' knowledge about the detail about nutrition information label. Questions were adapted from (Barry, 2005).

The score was 1 for correct answer and 0 for incorrect answer

The highest score was 5 and the lowest was 0.

score 0-1 : Poor knowledge

score 2-3 : Fair knowledge

score 4-5 : Good knowledge

Part 3: Perceived importance of product factors. (16 items)

The aim of this part was to assess the level of student' perceived about product factors that consist of price, taste, nutrient and packaging.

(Adapted from: (Rodolfo M., 1999)

This part is perceived of product that there are 3 products which includes: beverage, snacks and instant noodle.

In total of 12 questions were used by using multiple choices measurement rating scale. There were 5 choices

Messages with perceived importance of product factors

Choices	points
Strongly not important	1
Somewhat not important	2
Important	3
Somewhat important	4
Strongly important	5

The respondents' perceive was classified into three levels (Bloom B.S., 1956)

Average	Definition
Less than 60 % of 15 scores	Poor perceive
From 60 % - 80 % of 15 scores	Moderate perceive
Greater than 80 % of 15 scores	Good perceive

Part 4: Attitude about the usefulness of nutrition information (8 items)

The purpose of this part was to assess the level of student' attitude about usefulness of nutrition information that consist of positive sentences and negative sentences. (Adapted from: (Rodolfo M., 1999) and (Saha, 2013)

The answers were categorized into four levels: Strongly disagree, somewhat disagree, moderate agree, somewhat agree and strongly agree

For the **positive** questions, the score is as following

Choices	**points**
Strongly disagree	1
Somewhat disagree	2
Moderate agree	3
Somewhat agree	4
Strongly agree	5

For the **negative** questions, the score is converted as following:

Choices	**points**
Strongly disagree	5
Less disagree	4
Moderate agree	3
More agree	2
Strongly agree	1

The respondents' attitude was classified into three levels) (Bloom B.S., 1956)

Average	**Definition**
Less than 60 % of 40 scores	Poor attitude
From 60 % - 80 % of 40 scores	Moderate attitude
Greater than 80 % of 40 scores	Good attitude

Part 5: Behavior of reading the nutrition information of each type of food. (35 items) (Adapted from (Saha, 2013)

In this part there are three products. There are 35 questions were used by using multiple choices measurement rating scale. There were 5 choices

Messages with behavior of reading the nutrition information

Choices	**points**
Never	0
Once	1
Sometimes	2
Often	3
Every time	4

(Ministry of Public Health, 2000) suggested that consumers had to read nutrition information label on the product that consist of:

1. Total energy
2. Sugar
3. Fat
4. Sodium

Table 2 The calculation of frequently read nutrition information label

	Nutrition information (total energy, sugar, fat and sodium)			
times / read	4	3	2	1
4	16	12	8	4
3	12	9	6	3
2	8	6	4	2
1	4	3	2	1

From the table 2

Frequently of reading each time

Never read got 1 score

Once time got 2 score

Sometimes got 3 score

Always got 4 score

Nutrition information consist of total energy, sugar, fat and sodium

Read 1 nutrient got 1 score

Read 2 nutrients got 2 score

Read 3 nutrients got 3 score

Read 4 nutrients got 4 score

As for grading of the Behavior of reading the nutrition information of each type of food (beverage, snacks and instant noodles) . The rating for the behavior was calculated using this scale. (Bloom B.S., 1956)

Average	Definition
Greater than 80 % of 48 scores	Good behavior
From 60 % - 80 % of 48 scores	Moderate behavior
Less than 60 % of 48 scores	Poor behavior

3.8 Data analysis

For data analysis, we was used SPSS version 20.0 software to analysis. Following were the statistics in use:

1. General characteristics : Finding frequency, percentage, mean, standard deviation, median and range.

2. Chi-square test was used to find the association among general characteristics, level of knowledge, perceived, attitude and behavior regarding to nutrition information action by Chi-square.

Fisher exact test was used to find these factors such as knowledge, perceived, attitude, gender, age, BMI, year and faculty.

3. Correlation analysis the association among some general characteristics, level of knowledge, perceived, attitude and behavior regarding to nutrition information action by correlation. Each analysis was compared a statistically significant p-value <0.01 , 0.05.

3.9 Reliability and Validity

Validity (Surapong, 2008)

The questionnaire constructed by the researcher and three experts comment validity and clarify of language. The experts included health professionals from College of Public Health Sciences, Chulalongkorn University and Department of Health Education, Faculty of Education, Srinakharinwirot University. The experts consists of Assoc. Prof. Dr. Ratana Somrongthong,Dr. Kamonman Virutsetazin and Suthira Muangnapoe. The questionnaire was modified with their recommendations.

Reliability

The reliability of questionnaire in this study was analyzed by pilot test. The developed questionnaires was distributed to the undergraduate student in Srinakharinwirot University because of similar characteristic as this study there are 30 participants for pilot study. The result of the calculated for each instrument. The detail are shown in table 3.

Table 3 The instrument for reliability

Questionnaire	Reliability
Knowledge	.113
Perceived importance of product factors	.847
Attitude about the usefulness of nutrition information	.227
Behavior of reading the nutrition information of each type of food	.977

3.10 Ethical Consideration

This research was approved by the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University. (COA No.045/57). (Appendix D).

Chapter IV

RESULTS

4.1 General characteristics

Personal characteristics

Among 432 students, 53.9% were male and 46.1% were female. The age was ranged from 17 to 24 years old. The average age of participant was 20.16 (±1.314) years old. The majority of participants was 20 (28.9%). For the body mass index (BMI), most of participants (92.8%) were classified in the normal BMI categories (18.5-24.9). Around 40 percent of them had income ranging between 5,001 and 10,000 baht. 38.7% of them had income ranging from 10,001-15,000 baht, while 19%of them had income more than 15,000 and 0.5 % had income lower than 5,000. (Table4)

Table 4 General characteristics of undergraduate students

Characteristics	Number (n=432)	Percentage (%)
Total	432	100
Gender		
Male	233	53.9
Female	199	46.1
Age		
≤ 18	40	9.3
19 - 21	314	72.6
≥ 22	78	18.1
Mean = 20.16 (±1.314)		
Min – Max = 17 – 24		
Body mass index (Kg/mm^2)		
<18.5 (Underweight)	8	1.9
18.5-24.9 (Normal weight)	401	92.8
25.0-29.9 (Overweight)	20	4.6
>30.0 (Obesity)	3	0.7
Income per month (Baht)		
≤ 5,000	2	0.5
5,001 – 10,000	181	41.9
10,001 – 15,000	167	38.7
>15,000	82	19.0
Mean = 12,400		
SD= .756, Min – Max = 4,000 – 35,000		

Education Background

In each current year level, the majority of participants studied in the second year of bachelor degree (38%), while 30.6% of them was in the third year. Most of participants came from Faculty of Engineering (56 persons, 13.0%). Considering students faculty, more than 70% of them studied in the faculties which weren't include health science in their curriculum, whereas 25.93% of them studied in faculty which related to health science. The participant's education results (grade point average) from the last term rank more than3.00 were 318 (73.6%), rank 2.01-3.00 were 111 (25.7%) and rank lower than 2.00 were 3 (7%). (Table 5)

Table 5 Education Background of undergraduate students

Characteristics (n=432)	Number	Percentage (%)
Current year level		
First year	66	15.3
Second year	164	38.0
Third year	132	30.5
Forth year	69	16.0
Fifth year	1	0.2
Faculties		
Total student in health faculty	N = 112	25.93%
Faculty of Medicine	34	30.3
Faculty of Veterinary Medicine	13	11.6
Faculty of dentistry	17	15.2
Faculty of Pharmaceutical Sciences	17	15.2
Faculty of Allied Health Sciences	13	11.6
Faculty of Sport Science and Health	18	16.1

Table 5 Education Background of undergraduate students (Cont)

Characteristics (n=432)	Number	Percentage (%)
Total student in other faculty	N = 320	74.07%
Faculty of Engineering	56	17.5
Faculty of Art	26	8.1
Faculty of Science	47	14.7
Faculty of Political Science	22	6.8
Faculty of Architecture	22	6.8
Faculty of Psychology	9	2.8
Faculty of Commerce and Accountancy	34	10.7
Faculty of Education	39	12.2
Faculty of Communication Arts	13	4.1
Faculty of Economics	13	4.1
Faculty of Law	26	8.1
Faculty of Fine and Applied Arts	13	4.1
Grade point average (GPAX)	N= 432	100%
<2.00	31	7.2
2.01 – 3.00	243	56.2
>3.00	158	36.6

Personal behavior related to health behavior

In this part is personal behavior, research can described behavior of undergraduate students in Culalongkorn University as follow:

A greater proportion of students (73.1 %) reported that they were eating 3 meals per day, while 79 students or 18.3% were eating 2 meals per day and 37 students or 8.6 % were eating more than 3 meals per day. Mostly of participants

(36.6%) consume snack 3-4 times per week. Among the 191 participants with good health (44.2%) and they work out 1-2 times per week (32.6%). (Table 6)

Table 6 Health behavior of undergraduate students

Characteristics	Number (n=432)	Percentage (100%)
Meals per day		
2 meals	79	18.3
3 meals	316	73.1
More than 3 meals	37	8.6
Snacks per week		
Never	24	5.6
1-2 times	114	26.4
3-4 times	158	36.6
5-7 times	60	13.9
More than 7 times	76	17.6
Overall health		
The worst	2	0.5
Poor	22	5.1
Moderate	137	31.7
Good	191	44.2
The best	80	18.5
Exercise per week		
Never	121	28.0
1-2 times	141	32.6
3-4 times	85	19.7
5-6 times	42	9.7
Everyday	43	10.0

4.2 knowledge of nutrition information

All 432 undergraduate students were accessed their knowledge level regarding to nutrition information by using developed questionnaire which mentioned in Chapter 3, page 32. This study found that the average knowledge score from the participant was 2.59 (±1.19) out of 5.

In this part, the questions were include poor, fair and good knowledge which test participants understanding on nutrition information. This study found that most of them could be answered correctly on poor, fair and good knowledge.

Table 7 shows that most of participants had “fair knowledge” with 63.4%, while “poor knowledge” and “good knowledge” were 18.2% and 18.3% respectively.

However, they were still misunderstanding on amount of sodium which people should receive per day and on serving of food product. The details of the data are shown in appendix C.

Table 7 Distribution of knowledge level about nutrition information

Knowledge	Number (n=432)	Percentage (%)
Poor Knowledge (0-1 scores)	79	18.2
Fair Knowledge (2-3 scores)	274	63.5
Good knowledge (4-5 scores)	79	18.3
$\overline{X}$ = 2.59 SD = 1.19, Min = 0 Max = 5		

4.3 Students’ attitude on usefulness of nutrition information

Table 8 showed level on the usefulness of nutrition information, 288 (66.8%) all participants had “moderate attitude”. 28.8% of them had poor attitude on this usefulness. In contrast, only 4.4% of them agree that the nutrition information was useful for them.

Most of participants thought that the information on nutrition information is enough for them, however some of them shown the information on nutrition is not important and too confusing to understand for them. The details of the data are shown in appendix C.

Table 8 Distribution of attitude about the usefulness of nutrition information

Level of attitude	Number (n=432)	Percentage (%)
Poor attitude (8 - 23 scores)	125	28.8
Moderate attitude (24 - 32 scores)	288	66.8
Good attitude (33 - 40 scores)	19	4.4
$\overline{X}$ = 25.44 SD = 3.63, Min = 16 Max = 40		

4.4 Perceived related to nutrient of food products

This part considered on nutrient of beverage, snacks and instant noodle. The average perceived importance of product factors score for all participants is 10.04 (±2.33). The perceived importance of product factors was divided with 3 level: “poor perceive”, “moderate perceive” and “good perceive”. Mostly of participants had “moderate perceive” with the rate of 58.1%. Besides, there was only 15.5% participants had “good perceive” while a higher number of participants had “poor perceive” (26.4%). The further detail on perceived of price, taste, nutrient and packaging of food product was shown in appendix C.

Table 9 Perceived importance of product factors on the nutrient

Level of perceived	Number (n=432)	Percentage (%)
Poor perceive (1 - 8 scores)	114	26.4
Moderate perceive (9 - 12 scores)	251	58.1
Good perceive (13 - 15 scores) $\overline{X}$ = 10.04 SD = 2.33, Min = 4 Max = 15	67	15.5

4.5 Behavior of frequently reading nutrition information

This table 10 revealed that participants (54%) read beverage nutrition information sometimes while snacks and instant noodle, participants (39% and 44% respectively) read only once. Some students read nutrition information every time. Out of three product factors students pay attention to reading beverage nutrition information (12.5%).

Table 10 Distribution of behavior of reading the nutrition information

	Behavior of reading nutrition information			
	Not read	Once	Sometime	every time
Beverage	59 (13.7)	147 (34)	172 (54)	54 (12.5)
Snacks	54 (12.5)	170 (39.4)	169 (39.1)	39 (9)
Instant noodle	60 (13.9)	190 (44)	148 (34.3)	34 (7.9)

Frequently of reading nutrition information

In table 11, it was found that most of students usually read total energy of these products such as beverage 116(26.9%), snacks 130 (30.1%) and Instant noodle 107 (24.8%). When drinking beverage most read the amount of sugar. However for snacks students pay less attention to the amount of sodium.

Table 11 frequently of reading nutrition information

	Frequently of reading nutrition information			
	Total energy	Amount of total fat	Amount of sugar	Amount of sodium
Beverage	116 (26.9)	54 (12.5)	82 (19)	40 (9.3)
Snacks	130 (30.1)	66 (15.3)	60 (13.9)	54 (12.5)
Instant noodle	107 (24.8)	50 (11.6)	45 (10.4)	72 (16.7)

Frequently of reading food label

In table 12, it was found that most participants have more frequently read date of expiration of beverage, snacks and instant noodle. Date of manufacture and FDA label were fairly similar indicating that majority of the population were concern about the date of expiration

Table 12 frequently of reading food label

	Frequently of reading food label		
	Date of manufacture	Date of expiration	Food and drug administration (FDA) label
Beverage	172 (39.8)	333 (77.1)	116 (26.9)
Snacks	164 (38)	334 (77.3)	98 (22.7)
Instant noodle	138 (31.9)	332 (76.9)	130 (30.1)

Level of reading nutrition information behavior

This part concentrated on the behavior of nutrition information reading of beverage, snacks and instant noodle. Table 14 behavior of reading nutrition information, most of participants 421 (97.5%) had poor behavior. They were only 1.9% of those who had moderate behavior and 0.7% of those who had good behavior. Average score of is 5.69 (±7.79).

Table 13 Behavior of reading nutrition information label

Level of behavior	Number (n=432)	Percentage (%)
Poor behavior (0 – 28.7 scores)	421	97.5
Moderate behavior (28.8 – 38.4 scores)	8	1.9
Good behavior (38.5 - 48 scores)	3	0.7
$\overline{X}$ = 5.69 SD = 7.936, Min = 0 Max = 48		

4.6 Association knowledge, perceived, perception, general characteristics and behavior of nutrition information

Knowledge

Most participants of each group got poor / fair behavior (97.7%) (Fisher's Exact Test = .431) at P-value >0.05, therefor level of knowledge was not significantly associated with behavior of reading nutrition information.

Perceived

Most participants of each group got moderate / good perceived (96.9%) (Fisher's Exact Test = .302) at P-value >0.05, therefor level of perceived was not significantly associated with behavior of reading nutrition information.

Attitude

Most participants of each group got poor / moderate behavior (98.3%) (Fisher's Exact Test = .001) at P-value <0.05, therefor level of perception was significantly associated with behavior of reading nutrition information.

Gender

The Fisher's Exact Test of gender was .359 at p-value >0.05. The relation of gender and behavior of reading nutrition information was not significantly associated.

Age

The age group of students who age ≥20 years has highest percentage of behavior of reading nutrition information (97.6%). However, there was not significantly difference between behavior of reading nutrition information and age (Fisher's Exact Test = 1.00) at P-value <0.05

Body mass index (BMI)

Most participants who has normal BMI has highest percentage of behavior of reading nutrition information (97.5%). However, there was not significantly difference between behavior of reading nutrition information and Body mass index (BMI) (Fisher's Exact Test = .564) at P-value <0.05.

Current year level

When consider by studying of students who year 1-2 has highest percentage of behavior of reading nutrition information (97.4%). However, there was not significantly difference between behavior of reading nutrition information and age (Fisher's Exact Test = 1.00) at P-value <0.05.

Faculty

When consider by studying each faculty of students who other faculty has highest percentage of behavior of reading nutrition information (97.6%). However, there was not significantly difference between behavior of reading nutrition information and age (Fisher's Exact Test = .728) at P-value <0.05.

Table 14 Association between general characteristics, knowledge, attitude, perceived of nutrition information and level of reading nutrition information

	Level of reading nutrition information behavior		Total	Fisher's Exact Test
	Poor	Moderate/Good		
Knowledge				
Poor / Fair	345 (97.7)	8 (2.3)	353 (100%)	.431
Good	76 (96.2%)	3 (3.8%)	79 (100%)	
Perceived				
Poor	113 (99.1 %)	1 (0.9%)	114 (100%)	.302
Moderate / Good	308 (96.9%)	10 (3.1%)	318(100%)	
Attitude				
Poor / moderate	406 (98.3%)	7 (1.7%)	413 (100%)	.001*
Good	15 (79%)	4 (21%)	19 (100%)	
Gender				
male	229 (98.2)	4 (1.8%)	233 (100%)	.359
female	192 (96.5)	7 (3.5%)	19 9(100%)	
Age				
< 20	142 (97.3%)	4 (2.7%)	146 (100%)	1.000
≥20	279 (97.6%)	7 (2.4%)	286 (100%)	
Body mass index (BMI)				
Normal	391(97.5)	10 (2.5%)	401(100%)	.564
Abnormal	30 (96.8)	1 (3.2)	31 (100%)	
Year				
Year 1 - 2	224 (97.4)	5 (2.6%)	230 (100%)	1.000
Year 3 – 5	197 (97.5%)	6 (2.5%)	202 (100%)	
Faculty				
Health Faculty	100 (97.1%)	3 (2.9%)	103 (100%)	.728
Other faculty	321 (97.6%)	8 (2.4%)	329 (100%)	

* Significant at p-value 0.01

4.7 The Pearson's correlation knowledge and perception and general characteristics on behavior of reading nutrition information

The result in the table 15 indicates that there are a positives significant at low relationship attitude towards behavior of reading nutrition information at significant level less than 0.01 (2-tailed) (p-value = .000, r-value = .257) It means that if undergraduate students have more attitude, they would have good level of reading nutrition information. In addition to, salary has a positives significant at low relationship with behavior of reading nutrition information (P<0.05) (r-value=.104). It means that if undergraduate students got more monthly income, attention of reading behavior would decreased. Moreover, there is significantly negative relationship behavior of reading nutrition information and age among undergraduate students in Chulalongkorn University at 0.05 significant level (r-value = -.095). It means that if undergraduate students got older, reading behavior would decreased.

Table 15 Correlation between knowledge, attitude, perceived and related factors

	Knowledge	Perceived	Attitude	Behavior	Age	BMI	GPAX	Salary
Knowledge		-.023	.045	.001	.050	-.088	.011	.066
Perceived			.257**	.049	.067	.024	.049	-.011
Attitude				.257**	-.003	.018	.041	.104*
Behavior					-.095*	.048	.009	.064
Age						-.025	-.066	-.080
BMI							.084	0.47
GPAX								0.46
Salary								

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Chapter IV

DISCUSSION, CONCLUSIONS AND RECOMMENTDATION

5.1 Discussion

This study investigates an association between knowledge, perceive and attitude of nutrition information and behavior of reading nutrition information among undergraduate students. By understanding the respondent characteristic on the nutrition behavior, the stake holder gain information to make intervention for increasing healthier food consumption.

The information on food labels is increasing but only few consumers are interested to read it. In fact, this nutrition information is important whether we will consume it or not, or how much we can consume this food. some researchers have concluded that nutrition information can affect food choice, usually by leading consumers to make selections that avoid negative nutrients such as fat, saturated fat and cholesterol (Drichoutis, Lazaridis, & Jr., 2006). However, other studies suggest that in some situations, overweight eaters may be inclined to eat a larger quantity of food with a positive health claim or label due to a "health look alike food" (Wansink & Chandon, 2006)

This study found that a greater proportion of students (73.1 %) reported that they were eating 3 meals per day. Most of participants (92.8%) were classified in the normal BMI categories (18.5-24.9). Moreover, most of respondents reported that their health status is in good health (44.2%).

This study found that most of respondents had knowledge at the possible of limited literacy (2-3 scores within 5 scores), whilst only 18.3 percent who has adequate literacy on the nutrition information. The hypothesis testing yielded that knowledge about nutrition information did not correlate significantly with the behavior of reading nutrition information. This study support a finding that the nutrition knowledge do not associate with the behavior on looking for nutrition information (Grunert, 2010). But

this study do not go along with study on knowledge of graduate study at Chiang Mai University, most of respondents always read a nutrition information before buying (Sukjan, 2003). Additionally, a study in Belgian found that adult Belgian knowledge on nutrition did not correlate with information use (Pasific, 2012). Level of perceived was significantly associated with behavior of reading nutrition information. Consumer's perceived of important on product factors was mostly moderate perceive (66.9) follows by poor perceive (26.5%). The hypothesis result shows that perceive on the important of product factors related significantly to the behavior of reading nutrition information. Moreover, the level of perception was significantly associated with behavior of reading nutrition information. The perception on the food (ready-consumed food) may influence by several food technical factors such as price, size, color, taste (Wongmutha, 1999). According to social cognitive theory and the theory of reasoned action represented the perceive benefic and barrier of action are only two attributes of pathways that induce behavior (Avis NE, Smith KW, & JB, 1989). A person needs to believe the benefits of the new behavior over old behavior (Centers for Disease Control and Prevention, 2004) and then new behavior will be adopted. According to the study in United Kingdom found a big perceived barrier to exercise was physical exertion, which was rated significantly higher than time wasting, exercise background, and family discouragement barriers, while the physical activity programmers was essential designed for perception with high benefit/barrier ratio to conduct to participate in exercise (Lovell, Ansari, & Parker, 2010); similar with the study of the relationship between a breast self-exam (BSE) and perceive of benefit because breast cancer is found earlier that is more chance of survival. After BSE have done that is the effective earlier detection but not all women check with BSE. Women should believe about the benefits by adopting this behavior like groups of black women who believed BSE have benefit did them more frequently (Graham, 2002).

However the perceive on food factor do no only influence by food technical factors but also by psychological factor such as familiarity, expectation, past experience and socio-cultural factors (Wongmutha, 1999). Regarding the technical food factors may lead consumer to read on the nutrition information as they may consider to by

the food. On the other side a study by Aaron et al in 1995, the nutrition information label did not effect on food choice (Aaron, Evans, & Mela, 1995).

The nutrition information is useful information that needs to know before we decide to buy a food product. However, the attitude of customer may different on this important information. It was found most of participants (66.8%) had "moderate perception", only 4.4% had good perception. The perceived of product factor correlate significantly with the attitude on the nutrition information. The Pearson's correlation shows significant result on the relationship of attitude on nutrition information toward the behavior of reading nutrition information. This findings shows that consumer who has low attitude toward nutrition information may lead to the low behavior on the reading nutrition information. Many literature identified that health information can facilitate bringing awareness about benefits of healthy practices. Several studies explain positive influence of health information on health practice. for example, one study stated people use hearing aids when they received knowledge about how to use hearing aids and benefits (Chamroonsawasdi, 2010). According to the study in Nepal presented In the residents of a semi urban community of Nepal were determined the knowledge, attitude and practice/behavior of cardiovascular health and found lack of knowledge was causes of CVD identified behavioral factors such as smoking more frequently. Responses delay related unhealthy diet and obesity (Chen, Yu, & Glaser, 2009). Similarity with the study in Vietnam found Knowledge about bad effects of tobacco smoking influence on stroke and heart attack related to lower health risks of active smoking and exposure to second-hand smoke in Vietnam (An, Minh, Huong, & al, 2013).

Regarding the behavior on reading the nutrition information, most of respondents do not read the nutrition information every time. It found that the reading behavior on nutrition information of most respondent were poor. However it was found that they give more attention on nutrition information for beverage, comparing to snack and instant noodle. The nutrition information that they read is usually the total energy and the sugar content percentage, they did not concern on the amount of sodium. Furthermore, it was found that respondent give more attention on the label

of date of expiration. A similar study in UK found that the information the respondents had looked for, the most frequently mentioned was fat (49% of those who had looked for nutrition information) followed by sugar (35%), calories (33%), salt (20%), saturates (11%) and additives (10%) (Grunert, 2010).

The low reading behavior of respondent may influence by several factors, it is not necessarily always affected by knowledge, perceive and attitude on the nutrition information. The behavior may also influence by the readiness of the nutrition information label itself. For instance, a study by Rigby and colleagues in 2008, they posit although 63% of the subjects read nutrition labels, only 25% claimed to understand them (Rigby & Tommis, 2008). Since the consumer does not understand the nutrition information label, they tend to ignore the information provided in the food package.

In addition, the respondent age has negative significant correlation with the reading behavior on nutrition information, on the other word the older the age the less they read the nutrition information. Factors such as age, income, education level, socioeconomic status, and belief in the diet-illness relationship are associated with consumers' use of nutrition labels (Rosenthal, 2009). This research supported a study by Petrovici et al. (2006) found that Romanian subjects who were younger, had higher educations, better comprehension of nutrition concepts, and higher incomes were more likely to read food labels (Petrovici & Ritson, 2006). The association of income, education level, socioeconomic status and consumers' use of nutrition labels is similar with the relationship between socioeconomic status (SES) and health have been addressed by many studies. Some reasons presented that people have better health related behavior because of higher socioeconomic status, while the others insist on the lower SES cause of poor disadvantage health related behavior. According to the study in UN stated that education is an important determinant of health and death, both level of personal and household in developed countries. Education and income have a relation together, person's education enhances income and income reflected the person's education. Education may leverage person's social status and better life by providing the better choice of health service utilization and health related behavior

such as diet or consumers' use of nutrition labels (United_Nation, 2003). Similar with the report of UN population growth and demographic structure described about the developed countries, income was associated with household health expenses which increased rapidly in the first year of child birth and decline later, and would rise again when the family member became old. Hence, household income had both direct and indirect impact on morbidity and death (United_Nation, 2001).

To sum up, the level on the reading nutrition information that represent the reading behavior on the nutrition information may influence by the perceived and attitude on the nutrition information.

5.2 Conclusions

This study articulated some important findings. The gender, year of study and the major (program study or faculty) do not related to the level of reading behavior on nutrition information.

The low level of reading behavior on nutrition behavior is understandable in accordance with their healthy status and normal BMI. A research on the relationship between use of food labels and nutrition knowledge of people with diabetes articulated that people with diabetes tend to read nutrition label information more often than general consumers (Kessler & Wunderlich, 1999).

Perceive and attitude on the nutrition information are positive predictor on the behavior of reading nutrition information. But the knowledge of nutrition information does not associate with the behavior of reading nutrition information. Low perceive and low attitude on the nutrition information will lead to the read behavior on the nutrition information. Asking only the read behavior is not enough to know whether consumer understands the meaning of information provided at the nutrition information label.

5.3 Recommendation

For the result of behavior of reading nutrition information. Level of nutrition information reading of students was low. The solution of this problem is a campaign about reading nutrition information label more. Giving knowledge basic of nutrition information is necessary for students and other people because they can use the knowledge to choose suitable food products for their self.

Due to increased concern of dietary related health problems and increasing of the overweight problems in developing countries, a development a strategy to educate population in nutrition become important.

The nutrition information label on the food package is one strategy to inform consumer about the food that they chose to eat. However the consumer behaviors of reading the nutrition information need to be developed. On the other side, the nutrition information should easy to be understood by general consumer. It is realized that is not as simple as ABC to increase the consumer concern on nutrition, however the nutrition information use will give the nutrition content information that may lead a consumer to choose their food. Thus, food producer should create understandable nutrition information, while consumer needs to be wakened up their concern on food choice.

Further research should be more give information on the nutrition information readiness and in what extend the provided nutrition information can be implemented by food producers and general population.

5.4 Limitation

1. Self-reported questionnaire may affect the recall bias of the participants.

2. In the questionnaire, in part of behavior of reading nutrition information. In term of “what do you read nutrition information”. Some students might not know that can choose many choices in each question. It’s seem students thought that can choose one choice.

5.5 Expected Benefit

1. The students aware of reading nutrition information before buying the products.

2. The students can fine more information about food or beverage information on the products for deciding to consume them.

3. The students who is control weight can choose food product which consisted of low fat or low sugar.

4. The students can compare food products if the same type by choosing a better nutrient.

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APPENDIX

APPENDIX A

QUESTIONNAIRE (English version)

FACTORS ASSOCIATED WITH NUTRITION INFORMATION READING AMONG STUDENTS IN CHULALONGKORN UNIVERSITY

Explanation

The questionnaire related to behavior of reading nutrition information and its influence factors among undergraduate student in Chulalongkorn University. Your responses would only be used for academic purposes.

The questionnaire contains 5 parts (total 40 items) and will take 20 minutes to complete.

Part 1 General information (12 items)

Part 2 Knowledge of nutrition information (5 items)

Part 3 Perceived importance of product factors (12 items)

Part 4 Perception about the usefulness of nutrition information (8 items)

Part 5 Behavior of reading the nutrition information (3 items)

Thank you for your kind cooperation in providing information

Natapong Sooktowyad

College of Public Health Sciences

Chulalongkorn University

Part 1: General information

Instruction: The following questions are about general characteristics information. Please √ in the parenthesis ( ) and/or also write down in the blank space where provided.

1. What is your gender?

( ) Male ( ) female

2. How old are you? ..... Years

3. Weight.....Kilograms

Height.....Centimeters

4. What is your current year level?

( ) First year ( ) Second year ( ) Third year

( ) Forth year ( ) fifth year ( ) sixth year

5. What is your faculty?

☐ Faculty of Education ☐ Faculty of dentistry

☐ Faculty of Communication Arts ☐ Faculty of Pharmaceutical Sciences

☐ Faculty of Psychology ☐ Faculty of Law ☐ Faculty of Medicine

☐ The office of the commission on Agricultural Resource Education

☐ Faculty of Political Science ☐ Faculty of Architecture

☐ Faculty of Sport Science and Health ☐ Faculty of Veterinary Medicine

☐ Faculty of Fine and Applied Arts ☐ Faculty of Science

☐ Faculty of Commerce and Accountancy ☐ Faculty of Engineering

☐ Faculty of Economics ☐ Faculty of Allied Health Sciences

☐ Faculty of Art

6. What is your grade point average (GPAX) in the last semester.....

7. How much do you get income per month .....THB

8. How many meals do you eat per day?

1. ( ) 1 meal 2. ( ) 2 meals 3. ( ) 3 meals 4. ( ) more than 3 meal

9. How often do you eat snacks per week?

1. ( ) never 2. ( ) 1-2 times 3. ( ) 3-4 times 4. ( ) 5-6 times 5. ( ) every days

10. In your opinion, overall health is .....

1. ( ) Terrible 2. ( ) Poor 3. ( ) Moderate 4. ( ) Good 5. ( ) Excellent

11. How often do you do exercise per week?

1. ( ) never 2. ( ) 1-2 times 3. ( ) 3-4 times 4. ( ) 5-6 times 5. ( ) More than 6 times

12. Do you have food allergies?

( ) no ( ) yes If you answer “yes” what kind of food

_____

Part 2: Knowledge of on nutrition information

(Adapted from Barry, D. et al., 2005)

Instruction: Please answer in the space by using ✓for answer the questions about nutrition information

Nutrition information			
One consumer unit: **1/2 pack (30 g)**			
The number of units consumed per **2**			
Nutritional value per unit consumed			
All energy 160 Kcal (Energy from the fat **80** kcal)			
		Per cent of the recommended volume per day*	
Total fat 9 g		14 %	
Saturated fats 2 g		10 %	
Cholesterol 0 mg		0 %	
Protein 2 g			
All carbohydrates 18 g		6 %	
Dietary fiber 1 g		4 %	
Sugar less than 1 g			
Sodium 140 mg		6 %	
	Per cent of the recommended volume per day*		
Vitamin A	0 %	Vitamin B1	2 %
Vitamin B2	0 %	Calcium	0 %
Iron	2 %		
*** Per cent of the recommended macronutrients intake per day for Thai people, age 6. Years (Thai RDI) based energy requirements 2000 kcal/day.**			
The power requirement of each person differs from those of energy per day, 2000 kcal should get various nutrients are as follows:			
Total fat	less than 65 g		
Saturated fats	less than 20 g		
Cholesterol	less than 300 mg		
All carbohydrates	300 g		
Dietary fiber	25 g		
Sodium	less than 2,400 mg		
Energy (kcal) per gram : Fat = 9; Protein = 4 ; carbohydrates = 4			
Ingredients: Potatoes, Rice bran oil, Seasoning			

From the nutrition above please answer the questions as following

1. If you eat the entire pack, how many calories will you eat?

- ☐ 80 kilocalories
- ☐ 160 kilocalories
- ☐ 320 kilocalories

2. If you eat this one pack, how much energy from fat you will receive?

- ☐ 40 kilocalories
- ☐ 80 kilocalories
- ☐ 160 kilocalories

3. If you eat this one pack, how much sodium you will receive?

- ☐ 70 milligram
- ☐ 140 milligram
- ☐ 280 milligram

4. How many gram one serving of this product?

- ☐ 15 gram
- ☐ 30 gram
- ☐ 60 gram

5. From the nutrition information how many gram of Carbohydrate that percent of recommended macronutrients intake per day for Thai people, age 6. Years (Thai RDI) based energy requirements 2000 kcal/day?

- ☐ 150 gram
- ☐ 200 gram
- ☐ 300 gram

Part 3: Perceived importance of product factors (Adapted from: Rodolfo, M. and Nayga, Jr., 1999)

Instruction: Please ✓ in the figures that correspond to your opinion.

1 = The least important

2 = Less important

3 = Moderate important

4 = Very important

5 = The most important

1. Beverage

Product factors	The least important	Less important	Moderate important	Very important	The most important
Price					
Taste					
Nutrient					
Packaging					

2. Snacks

Product factors	The least important	Less important	Moderate important	Very important	The most important
Price					
Taste					
Nutrient					
Packaging					

3. Instant noodle

Product factors	The least important	Less important	Moderate important	Very important	The most important
Price					
Taste					
Nutrient					
Packaging					

Part 4: Perception about the usefulness of nutrition information

(Adapted from: Rodolfo, M. and Nayga, Jr., 1999 and Saha, S. et al., 2013)

Instruction: Please ✓ in the figures that correspond to your opinion.

1 = Strongly Disagree

2 = Somewhat Disagree

3 = Agree

4 = Somewhat Agree

5 = Strongly Agree

Description	**Strongly Disagree**	**Less Disagree**	**Moderate Agree**	**More Agree**	**Strongly Agree**
1. "The information on nutrition information is not important to me"					
2. "I read nutrition information because good health is important to me"					
3. "The information on nutrition information is inadequate"					
4."Using nutrition information to choose foods is better than just relying on my own knowledge about what is in them"					
5."Sometimes I try new foods because of the information on the nutrition information"					
6. "I feel unconfident that I know how to use nutrition information to make food choices"					
7."The information on nutrition information is enough for me"					
8."The information on nutrition information is too confusing to understand"					

Part 5 Behavior of reading the nutrition information

Instruction: Please ✓ into a space that you're buying behavior.

1. Beverage	**Frequently of consuming**	**Frequently of reading nutrition information**	**What do you read nutrition information?**
What kinds of beverage do you the most consume in 1 week? ☐ Soft drink ☐ Green tea and other tea ☐ Coffee ☐ Milk ☐ Brain nourishing drink. ☐ Other…….(identify)	☐ 1 – 2 times/week ☐ 3 – 4 times/week ☐ 5 – 7 times/week	☐ Not read ☐ once ☐ sometimes ☐ every time	☐ Date of manufacture ☐ Date of expiration ☐ Food and drug administration (FDA) label ☐ Total energy ☐ Total energy from fat ☐ Amount of total fat ☐ Amount of total saturated fat ☐ Amount of total cholesterol ☐ Amount of protein ☐ Amount of total Carbohydrate ☐ Amount of sugar ☐ Amount of sodium

2. Snacks	**Frequently of consuming**	**Frequently of reading nutrition information**	**What do you read nutrition information?**
What kinds of snacks do you the most consume in 1 week? ☐ Potato chips / Crispy Seaweed / crisp rice ☐ Toffee / Candy / chewing gum ☐ Cookie / Cake / Chocolate ☐ Other……(identify)	☐ 1 – 2 times/week ☐ 3 – 4 times/week ☐ 5 – 7 times/week	☐ Not read ☐ once ☐ sometimes ☐ every time	☐ Date of manufacture ☐ Date of expiration ☐ Food and drug administration (FDA) label ☐ Total energy ☐ Total energy from fat ☐ Amount of total fat ☐ Amount of total saturated fat ☐ Amount of total cholesterol ☐ Amount of protein ☐ Amount of total Carbohydrate ☐ Amount of sugar ☐ Amount of sodium

3. Instant noodles	Frequently of consuming	Frequently of reading nutrition information	What do you read nutrition information?
	☐ 1 – 2 times/week ☐ 3 – 4 times/week ☐ 5 – 7 times/week	☐ Not read ☐ once ☐ sometimes ☐ every time	☐ Date of manufacture ☐ Date of expiration ☐ Food and drug administration (FDA) label ☐ Total energy ☐ Total energy from fat ☐ Amount of total fat ☐ Amount of total saturated fat ☐ Amount of total cholesterol ☐ Amount of protein ☐ Amount of total Carbohydrate ☐ Amount of sugar ☐ Amount of sodium

APPENDIX B

QUESTIONNIRE (Thai version)

แบบสอบถามเลขที่ ☐

ส่วนที่ 1: ข้อมูลทั่วไป

คำชี้แจง: คำถามต่อไปนี้เกี่ยวกับข้อมูลทั่วไป กรุณา √ ในวงเล็บ ( ) และหรือกรอกในพื้นที่ว่าง

1. เพศ ( ) ชาย ( ) หญิง

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2. อายุ ..... ปี

3. น้ำหนัก.....กิโลกรัม ส่วนสูง.....เซนติเมตร

4. ปัจจุบันคุณศึกษาอยู่ชั้นปีอะไร?

1. ( ) ปี 1 2. ( ) ปี 2 3. ( ) ปี 3 4. ( ) ปี 4 5. ( ) ปี 5 6. ( ) ปี 6

5. คุณกำลังศึกษาอยู่คณะ

☐ วิศวกรรมศาสตร์ ☐ อักษรศาสตร์ ☐ วิทยาศาสตร์ ☐ รัฐศาสตร์ ☐ สถาปัตยกรรมศาสตร์ ☐ จิตวิทยา

☐ พาณิชยศาสตร์และการบัญชี ☐ ครุศาสตร์ ☐ นิเทศศาสตร์ ☐ เศรษฐศาสตร์ ☐ แพทยศาสตร์

☐ สัตวแพทยศาสตร์ ☐ ทันตแพทยศาสตร์ ☐ เภสัชศาสตร์ ☐ นิติศาสตร์ ☐ ศิลปกรรมศาสตร์

☐ สหเวชศาสตร์ ☐ วิทยาศาสตร์การกีฬา ☐ สำนักงานคณะกรรมการการศึกษาวิจัยทรัพยากรการเกษตร

6. เกรดเฉลี่ยรวมเทอมล่าสุด (GPAX).....

7. คุณได้รับเงินเดือนจากครอบครัว.....บาท/เดือน

8. ใน 1 วันคุณรับประทานอาหารหลักกี่มื้อ

1. ( ) 1 มื้อ 2. ( ) 2 มื้อ 3. ( ) 3 มื้อ 4. ( ) มากกว่า 3 มื้อ

9. คุณรับประทานอาหารว่างกี่ครั้งต่อสัปดาห์

1. ( ) ไม่เคย 2. ( ) 1-2 ครั้ง 3. ( ) 3-4 ครั้ง 4. ( ) 5-7 ครั้ง 5. ( ) ทุกๆวัน

10. คุณคิดว่าสุขภาพโดยรวมของคุณเป็นอย่างไร

1. ( ) แย่มาก 2. ( ) แย่ 3. ( ) ปานกลาง 4. ( ) ดี 5. ( ) ดีมาก

จากฉลากข้างต้นโปรดตอบคำถามต่อไปนี้

1. ถ้าท่านรับประทานผลิตภัณฑ์ทั้งหมดในซองนี้ คุณจะได้รับพลังงานทั้งหมดกี่กิโลแคลอรี่

- ☐ *80 กิโลแคลอรี่*
- ☐ *160 กิโลแคลอรี่*
- ☐ *320 กิโลแคลอรี่*

2. ถ้าท่านรับประทานผลิตภัณฑ์ทั้งหมดในซองนี้คุณจะได้รับพลังงานจากไขมันกี่กิโลแคลอรี่

- ☐ *40 กิโลแคลอรี่*
- ☐ *80 กิโลแคลอรี่*
- ☐ *160 กิโลแคลอรี่*

3. ถ้าท่านรับประทานผลิตภัณฑ์ทั้งหมดในซองนี้ จะได้รับโซเดียมกี่มิลลิกรัม

- ☐ 70 มิลลิกรัม
- ☐ 140 มิลลิกรัม
- ☐ 280 มิลลิกรัม

4. หนึ่งหน่วยบริโภคของผลิตภัณฑ์ซองนี้มีปริมาณกี่กรัม

- ☐ 15 กรัม
- ☐ 30 กรัม
- ☐ 60 กรัม

5. จากตัวอย่างฉลากโภชนาการของผลิตภัณฑ์ข้างต้น ปริมาณคาร์โบไฮเดรตที่แนะนำให้คนไทย (อายุ 6 ปีขึ้นไป) บริโภคต่อวัน โดยคิดจากความต้องการพลังงานวันละ 2,000 กิโลแคลอรี่ คิดเป็นกี่กรัม

- ☐ *150 กรัม*
- ☐ *200 กรัม*
- ☐ *300 กรัม*

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ส่วนที่ 3: การรับรู้ถึงความสำคัญของปัจจัยผลิตภัณฑ์อาหาร

คำชี้แจง: โปรดเลือกตัวเลขที่ตรงกับความคิดเห็นของท่านมากที่สุด ✓ โดยมีลำดับความสำคัญดังนี้

1 = สำคัญน้อยที่สุด 2 = สำคัญน้อย 3 = สำคัญปานกลาง 4 = สำคัญมาก 5 = สำคัญมากที่สุด

1. อาหารประเภทเครื่องดื่ม (เช่น น้ำอัดลม น้ำชาเขียวและชาอื่นๆ กาแฟ นม และเครื่องดื่มบำรุงสมอง)

ปัจจัยของผลิตภัณฑ์	สำคัญน้อยที่สุด	สำคัญน้อย	สำคัญปานกลาง	สำคัญมาก	สำคัญมากที่สุด
1.ราคา					
2.รสชาติ					
3.คุณค่าทางสารอาหาร					
4.บรรจุภัณฑ์					

2. ขนมขบเคี้ยว (เช่น มันฝรั่งทอดกรอบ, สาหร่ายทอดกรอบ, ข้าวเกรียบอบกรอบ เป็นต้น)

ปัจจัยของผลิตภัณฑ์	สำคัญน้อยที่สุด	สำคัญน้อย	สำคัญปานกลาง	สำคัญมาก	สำคัญมากที่สุด
1.ราคา					
2.รสชาติ					
3.คุณค่าทางสารอาหาร					
4.บรรจุภัณฑ์					

3. บะหมี่กึ่งสำเร็จรูป

ปัจจัยของผลิตภัณฑ์	สำคัญน้อยที่สุด	สำคัญน้อย	สำคัญปานกลาง	สำคัญมาก	สำคัญมากที่สุด
1.ราคา					
2.รสชาติ					
3.คุณค่าทางสารอาหาร					
4.บรรจุภัณฑ์					

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วันหมดอายุ 30 เม.ย. 2558

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ส่วนที่ 4: การรับรู้เกี่ยวกับประโยชน์ของฉลากโภชนาการ

คำชี้แจง: โปรดเลือกตัวเลขที่ตรงกับความคิดเห็นของท่านโดยใช้ ✓ โดยมีระดับดังนี้

1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วยน้อย 3 = เห็นด้วยปานกลาง 4 = เห็นด้วยมาก 5 = เห็นด้วยอย่างยิ่ง

ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วยน้อย	เห็นด้วยปานกลาง	เห็นด้วยมาก	เห็นด้วยอย่างยิ่ง
1. "ข้อมูลบนฉลากโภชนาการเป็นสิ่งที่ไม่มีความจำเป็นกับฉัน"					
2."ฉันอ่านฉลากอาหารเพราะสุขภาพที่ดีเป็นสิ่งที่สำคัญกับฉัน"					
3."ข้อมูลที่อยู่บนฉลากอาหารไม่เพียงพอสำหรับฉัน"					
4."การใช้ฉลากโภชนาการในการเลือกบริโภคอาหารดีกว่าการใช้ความรู้ของตัวเอง"					
5."บางครั้งฉันลองเลือกซื้ออาหารชนิดใหม่เพราะข้อมูลที่อยู่บนฉลากโภชนาการ"					
6."ฉันไม่มั่นใจว่าฉันรู้วิธีการใช้ฉลากโภชนาการในการเลือกอาหาร"					
7."ข้อมูลบนฉลากโภชนาการมีความเหมาะสมต่อการตัดสินใจเลือกบริโภคอาหาร"					
8."ข้อมูลที่อยู่บนฉลากโภชนาการมีความสับสนมากเกินกว่าจะสามารถเข้าใจได้"					

ส่วนที่ 5 พฤติกรรมการบริโภคอาหารและการอ่านฉลากโภชนาการ

คำชี้แจง: โปรดทำเครื่องหมาย ✓ ลงในช่องว่างที่ตรงกับการปฏิบัติของคุณ

1. อาหารประเภทเครื่องดื่ม	ความถี่ในการบริโภค	ความถี่ในการอ่านฉลากโภชนาการ	ทุกครั้งที่ท่านอ่านฉลากโภชนาการท่านอ่านอะไรบ้าง
ใน 1 สัปดาห์ ท่านบริโภคเครื่องดื่มประเภทไหน<u>มาก</u>ที่สุด ☐ น้ำอัดลม ☐ ชาเขียวและชาอื่นๆ ☐ กาแฟ ☐ นม ☐ เครื่องดื่มบำรุงสมอง ☐ อื่นๆ.....(ระบุ)	☐ 1 – 2 ครั้งต่อสัปดาห์ ☐ 3 – 4 ครั้งต่อสัปดาห์ ☐ 5 – 7 ครั้งต่อสัปดาห์	☐ ไม่อ่านเลย ☐ อ่านครั้งเดียว ☐ อ่านบางครั้ง ☐ อ่านทุกครั้ง	☐ วัน เดือน ปี ที่ผลิต ☐ วัน เดือน ปี ที่หมดอายุ ☐ เครื่องหมาย อย. ☐ พลังงานทั้งหมด ☐ พลังงานจากไขมัน ☐ ปริมาณไขมันทั้งหมด ☐ ปริมาณไขมันอิ่มตัว ☐ ปริมาณโคเลสตอรอล ☐ ปริมาณของโปรตีน ☐ ปริมาณคาร์โบไฮเดรตทั้งหมด ☐ ปริมาณของน้ำตาล ☐ ปริมาณของโซเดียม

2. อาหารประเภทขนมขบเคี้ยว	ความถี่ในการบริโภค	ความถี่ในการอ่านฉลากโภชนาการ	ทุกครั้งที่ท่านอ่านฉลากโภชนาการท่านอ่านอะไรบ้าง
ใน 1 สัปดาห์ ท่านบริโภคขนมขบเคี้ยวประเภทไหน<u>มากที่สุด</u> ☐ มันฝรั่งทอดกรอบ / สาหร่ายทอดกรอบ / ข้าวเกรียบอบกรอบ ☐ ลูกอม / ลูกวาด / หมากฝรั่ง ☐ คุกกี้ / ขนมเค้ก / ช็อกโกแลต ☐ อื่นๆ.....(ระบุ)	☐ 1 – 2 ครั้งต่อสัปดาห์ ☐ 3 – 4 ครั้งต่อสัปดาห์ ☐ 5 – 7 ครั้งต่อสัปดาห์	☐ ไม่อ่านเลย ☐ อ่านครั้งเดียว ☐ อ่านบางครั้ง ☐ อ่านทุกครั้ง	☐ วัน เดือน ปี ที่ผลิต ☐ วัน เดือน ปี ที่หมดอายุ ☐ เครื่องหมาย อย. ☐ พลังงานทั้งหมด ☐ พลังงานจากไขมัน ☐ ปริมาณไขมันทั้งหมด ☐ ปริมาณไขมันอิ่มตัว ☐ ปริมาณโคเลสตอรอล ☐ ปริมาณของโปรตีน ☐ ปริมาณคาร์โบไฮเดรตทั้งหมด ☐ ปริมาณของน้ำตาล ☐ ปริมาณของโซเดียม

3. บะหมี่กึ่งสำเร็จรูป	ความถี่ในการบริโภค	ความถี่ในการอ่านฉลากโภชนาการ	ทุกครั้งที่ท่านอ่านฉลากโภชนาการท่านอ่านอะไรบ้าง
	☐ 1 – 2 ครั้งต่อสัปดาห์ ☐ 3 – 4 ครั้งต่อสัปดาห์ ☐ 5 – 7 ครั้งต่อสัปดาห์	☐ ไม่อ่านเลย ☐ อ่านครั้งเดียว ☐ อ่านบางครั้ง ☐ อ่านทุกครั้ง	☐ วัน เดือน ปี ที่ผลิต ☐ วัน เดือน ปี ที่หมดอายุ ☐ เครื่องหมาย อย. ☐ พลังงานทั้งหมด ☐ พลังงานจากไขมัน ☐ ปริมาณไขมันทั้งหมด ☐ ปริมาณไขมันอิ่มตัว ☐ ปริมาณโคเลสตอรอล ☐ ปริมาณของโปรตีน ☐ ปริมาณคาร์โบไฮเดรตทั้งหมด ☐ ปริมาณของน้ำตาล ☐ ปริมาณของโซเดียม

APPENDIX C

RESULT DATA

1.Distribution of knowledge level about nutrition information

Knowledge	Number (n=432)	Percentage (%)
Limited literacy (0-1 scores)	79	18.2
The possible of limited literacy (2-3 scores)	274	63.4
Adequate literacy (4-5 scores)	79	18.3

2. **Participants had correct answer and not correct answer for each questions about nutrition information**

Questions	Correct (%)	Not correct (%)
1. If you eat the entire pack, how many calories will you eat?	254 (58.8)	178 (41.2)
2. If you eat this one pack, how much energy from fat you receive?	266 (61.6)	166 (38.4)
3. If you eat this one pack, how much sodium you will receive?	145 (33.6)	287 (66.4)
4. How many gram one serving of this product?	141 (32.6)	291 (67.4)
5. From the nutrition information how many gram of Carbohydrate that percent of recommended macronutrients intake per day for Thai people, age 6 Years (Thai RDI) based energy requirements 2000 kcal/day?	311 (72.0)	121 (28.0)

3. Participants had correct answer and not correct answer for each questions about nutrition information

Questions	Correct (%)	Not correct (%)
1. If you eat the entire pack, how many calories will you eat?	254 (58.8)	178 (41.2)
2. If you eat this one pack, how much energy from fat you receive?	266 (61.6)	166 (38.4)
3. If you eat this one pack, how much sodium you will receive?	145 (33.6)	287 (66.4)
4. How many gram one serving of this product?	141 (32.6)	291 (67.4)
5. From the nutrition information how many gram of Carbohydrate that percent of recommended macronutrients intake per day for Thai people, age 6 Years (Thai RDI) based energy requirements 2000 kcal/day?	311 (72.0)	121 (28.0)

4. Distribution of perceived importance of product factors

Perceived	The least important	Less important	Moderate important	Very important	The most important
1. Soft drink					
Price	10 (2.3)	96 (22.2)	184 (42.6)	89 (20.6)	53 (12.3)
Taste	15 (3.5)	55 (12.7)	183 (42.4)	130 (30.1)	49 (11.3)
Nutrient	11 (2.5)	62 (14.4)	140 (32.4)	129 (29.9)	90 (20.8)
Packaging	22 (5.1)	89 (20.6)	149 (34.5)	112 (25.9)	60 (13.9)
2. Milk					
Price	24 (5.6)	95 (22.0)	169 (39.1)	109 (25.2)	35 (8.1)
Taste	16 (3.7)	47 (10.9)	172 (39.8)	138 (31.9)	59 (13.7)
Nutrient	22 (5.1)	74 (17.1)	151 (35.0)	122 (28.2)	63 (14.6)
Packaging	27 (6.2)	86 (19.9)	167 (38.7)	114 (26.4)	38 (8.8)
3. Snacks					
Price	26 (6.0)	96 (22.2)	174 (40.3)	88 (20.4)	48 (11.1)
Taste	11 (2.5)	61 (14.1)	152 (35.2)	125 (28.9)	83 (19.2)
Nutrient	33 (7.6)	80 (18.5)	147 (34.0)	105 (24.3)	67 (15.5)
Packaging	19 (4.4)	81 (18.8)	142 (32.9)	131 (30.3)	59 13.7)

5. Perceived importance of product factors

Level of perceived	Number (n=432)	Percentage (%)
Poor perceive (12 - 35 scores)	115	26.6
Moderate perceive (36 - 48 scores)	289	66.9
Good perceive (49 - 60 scores)	28	6.5

6. **Perception about the usefulness of nutrition information**

Level of perception	Number (n=432)	Percentage (%)
Poor perception (8 - 23 scores)	125	28.8
Moderate perception (24 - 32 scores)	288	66.8
Good perception (33 - 40 scores)	19	4.4

7. Distribution of behavior of reading the nutrition information

1. Beverage	Number (n=432)	Percentage (%)
Kind of beverage		
Soft drink	102	23.6
Green tea and other tea	93	21.5
Coffee	55	12.7
Milk	114	26.4
Brain nourishing drink	58	13.4
Other.....(identify)	10	2.3
Frequently of consuming		
1 – 2 times/week	102	23.6
3 – 4 times/week	212	49.1
5 – 7 times/week	118	27.3
Frequently of reading nutrition information		
not read	59	13.7
once	147	34.0
sometimes	172	39.8
every time	54	12.5

Reading nutrition information	Not read	Read
Date of manufacture	260 (60.2)	172 (39.8)
Date of expiration	99 (22.9)	333 (77.1)
Food and drug administration (FDA) label	316 (73.1)	116 (26.9)
Total energy	316 (73.1)	116 (26.9)
Total energy from fat	366 (84.7)	65 (15.0)
Amount of total fat	378 (87.5)	54 (12.5)
Amount of total saturated fat	380 (88.0)	52 (12.0)
Amount of total cholesterol Missing 1 = .2	375 (86.8)	56 (13.0)
Amount of protein	386 (89.4)	46 (10.6)
Amount of total Carbohydrate	389 (90.0)	43 (10.0)
Amount of sugar	350 (81.0)	82 (19.0)
Amount of sodium	392 (90.7)	40 (9.3)

2. Snacks	Number (n=432)	Percentage (%)
Kind of snacks		
Potato chips / Crispy Seaweed / crisp rice	213	49.3
Toffee / Candy / chewing gum	61	14.1
Cookie / Cake / Chocolate	157	36.3
Other.....(identify)	1	0.2
Frequently of consuming		
1 – 2 times/week	123	28.5
3 – 4 times/week	218	50.5
5 – 7 times/week	91	21.1
Frequently of reading nutrition information		
not read	54	12.5
once	170	39.4
sometimes	169	39.1
every time	39	9.0

Reading nutrition information	Not read	Read
Date of manufacture	268 (62.0)	164 (38.0)
Date of expiration	98 (22.7)	334 (77.3)
Food and drug administration (FDA) label	334 (77.3)	98 (22.7)
Total energy	302 (69.9)	130 (30.1)
Total energy from fat	356 (82.4)	76 (17.6)
Amount of total fat	366 (84.7)	66 (15.3)
Amount of total saturated fat	371 (85.9)	61 (14.1)
Amount of total cholesterol	376 (87.0)	56 (13.0)
Amount of protein	387 (89.6)	45 (10.4)
Amount of total Carbohydrate	390 (90.3)	42 (9.7)
Amount of sugar	372 (86.1)	60 (13.9)
Amount of sodium	387 (87.5)	54 (12.5)

APPENDIX D

ETHICAL CONSIDERATION

บันทึกข้อความ

ส่วนงาน คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 โทร.0-2218-8147

ที่ จว277/57 **วันที่** 8 พฤษภาคม 2557

เรื่อง แจ้งผลผ่านการพิจารณาจริยธรรมการวิจัย

เรียน คณบดีวิทยาลัยวิทยาศาสตร์สาธารณสุข

สิ่งที่ส่งมาด้วย เอกสารแจ้งผ่านการรับรองผลการพิจารณา

ตามที่นิสิต/บุคลากรในสังกัดของท่านได้เสนอโครงการวิจัยเพื่อขอรับการพิจารณาจริยธรรมการวิจัย กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย นั้น ในการนี้ กรรมการผู้ทบทวนหลักได้เห็นสมควรให้ผ่านการพิจารณาจริยธรรมการวิจัยได้ ดังนี้

โครงการวิจัยที่ 043.1/57 เรื่อง ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย (FACTORS ASSOCIATED WITH NUTRITION INFORMATION READING AMONG STUDENTS IN CHULALONGKORN UNIVERSITY) **ของ นายณัฐพงศ์ สุขทั่วญาติ**

จึงเรียนมาเพื่อโปรดทราบ

(ผู้ช่วยศาสตราจารย์ ดร.นันทรี ชัยชนะวงศาโรจน์)
กรรมการและเลขานุการ
คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน
กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย

AF 01-12

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย
อาคารสถาบัน 2 ชั้น 4 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330
โทรศัพท์: 0-2218-8147 โทรสาร: 0-2218-8147 E-mail: eccu@chula.ac.th

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COA No. 077/2557

ใบรับรองโครงการวิจัย

โครงการวิจัยที่ 043.1/57 : ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

ผู้วิจัยหลัก : นายณัฐพงศ์ สุขทั่วญาติ

หน่วยงาน : วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ได้พิจารณา โดยใช้หลัก ของ The International Conference on Harmonization – Good Clinical Practice (ICH-GCP) อนุมัติให้ดำเนินการศึกษาวิจัยเรื่องดังกล่าวได้

ลงนาม..... ลงนาม.....
(รองศาสตราจารย์ นายแพทย์ปรีดา ทัศนประดิษฐ) (ผู้ช่วยศาสตราจารย์ ดร.นันทรี ชัยชนะวงศาโรจน์)
ประธาน กรรมการและเลขานุการ

วันที่รับรอง : 1 พฤษภาคม 2557 **วันหมดอายุ** : 30 เมษายน 2558

เอกสารที่คณะกรรมการรับรอง

1) โครงการวิจัย
2) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
3) ผู้วิจัย
4) แบบสอบถาม

เลขที่โครงการวิจัย 043.1/57
วันที่รับรอง - 1 พ.ค. 2557
วันหมดอายุ 30 เม.ย. 2558

เงื่อนไข

1. *ข้าพเจ้ารับทราบว่าจะปฏิบัติตามหลักจริยธรรม หากดำเนินการเก็บข้อมูลการวิจัยก่อนได้รับการอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยฯ*
2. *หากใบรับรองโครงการวิจัยหมดอายุ การดำเนินการวิจัยต้องหยุด เมื่อต้องการต่ออายุต้องขออนุมัติใหม่ล่วงหน้าไม่ต่ำกว่า 1 เดือน พร้อมส่งรายงานความก้าวหน้าการวิจัย*
3. *ต้องดำเนินการวิจัยตามที่ระบุไว้ในโครงการวิจัยอย่างเคร่งครัด*
4. *ใช้เอกสารข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และเอกสารเชิญชวนร่วมวิจัย (ถ้ามี) **เฉพาะที่ประทับตราคณะกรรมการเท่านั้น***
5. *หากเกิดเหตุการณ์ไม่พึงประสงค์ร้ายแรงในสถานที่เก็บข้อมูลที่ขออนุมัติจากคณะกรรมการ ต้องรายงานคณะกรรมการภายใน 5 วันทำการ*
6. *หากมีการเปลี่ยนแปลงการดำเนินการวิจัย ให้ส่งคณะกรรมการพิจารณารับรองก่อนดำเนินการ*
7. *โครงการวิจัยไม่เกิน 1 ปี ส่งแบบรายงานสิ้นสุดโครงการวิจัย (AF 03-12) และบทคัดย่อผลการวิจัยภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น สำหรับโครงการวิจัยที่เป็นวิทยานิพนธ์ให้ส่งบทคัดย่อผลการวิจัย ภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น*

AF 04-07

ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย

ชื่อโครงการวิจัยเรื่อง ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

ชื่อผู้วิจัย นายณัฐพงศ์ สุขทั่วญาติ ตำแหน่ง นิสิตระดับปริญญาโท

สถานที่ติดต่อผู้วิจัย

ที่ทำงาน วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

ที่บ้าน บ้านเลขที่ 9/4 หมู่ 3 ตำบล แม่คำมี อำเภอเมืองแพร่ จังหวัดแพร่

โทรศัพท์ (ที่ทำงาน) 0 2218-8193 ต่อ - โทรศัพท์ที่บ้าน -

โทรศัพท์มือถือ 086 797 7272 E-mail : isotope285@gmail.com

1. ขอเรียนเชิญท่านเข้าร่วมในการวิจัย ก่อนที่ท่านจะตัดสินใจเข้าร่วมในการวิจัย มีความจำเป็นที่ท่านควรทำความเข้าใจว่างานวิจัยนี้มีวัตถุประสงค์เพื่อต้องการสำรวจความรู้ การรับรู้ และพฤติกรรมการอ่านฉลากโภชนาการของผลิตภัณฑ์อาหาร ที่นิสิตบริโภคในชีวิตประจำวัน กรุณาใช้เวลาในการอ่านข้อมูลต่อไปนี้อย่างละเอียดรอบคอบ และสอบถามข้อมูลเพิ่มเติมหรือข้อมูลที่ไม่ชัดเจนได้ตลอดเวลา

2. โครงการนี้เกี่ยวข้องพฤติกรรมการอ่านฉลากโภชนาการของผลิตภัณฑ์อาหารที่มีขายอยู่ทั่วไปในห้างสรรพสินค้าและร้านสะดวกซื้อ ซึ่งฉลากโภชนาการจะแสดงปริมาณสารอาหารที่มีอยู่ในผลิตภัณฑ์ ฉลากโภชนาการมีความสำคัญเนื่องจากการดำเนินชีวิตมีความเร่งรีบในการเรียนและการทำงานทำให้ต้องพึ่งอาหารสำเร็จรูปมากขึ้น อาหารกึ่งสำเร็จรูป และขนมขบเคี้ยวมากขึ้น

3. วัตถุประสงค์ของการวิจัยนี้

3.1 เพื่อประเมินปัจจัยที่มีอิทธิพลกับพฤติกรรมการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

3.2 เพื่อประเมินระดับความรู้ ระดับการรับรู้ และระดับพฤติกรรมการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

3.3 เพื่อหาความสัมพันธ์ระหว่างความรู้ของฉลากโภชนาการและพฤติกรรมการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

3.4 เพื่อหาความสัมพันธ์ระหว่างการรับรู้ของฉลากโภชนาการและพฤติกรรมการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย

* ตัวเอียง หมายถึง คำอธิบาย ไม่ต้องระบุในเอกสาร

ปรับปรุงเมื่อ 23 พฤษภาคม 2554

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4. รายละเอียดของกลุ่มผู้มีส่วนร่วมในการวิจัย

- *ผู้มีส่วนร่วมในการวิจัยครั้งนี้ คือนิสิตระดับปริญญาตรีของทุกคณะ จำนวน 432 คน โดยมีเกณฑ์คัดเข้าดังนี้*

(1)ทั้งเพศชายและหญิง

(2) ไม่มีความบกพร่องในการมองเห็น

(3)ไม่แพ้อาหารชนิดใดชนิดหนึ่ง

(4) เป็นคนไทย

โดยสุ่มจากลำดับรายชื่อนิสิตที่เรียนอยู่ในห้องเรียน

เลขที่โครงการวิจัย 043.1/57
วันที่รับรอง - 1 พ.ค. 2557
วันหมดอายุ 30 เม.ย. 2558

- จากการตรวจสอบสถิติของนิสิตระดับปริญญาตรี ปีการศึกษา 2556 พบว่ามีจำนวนทั้งหมด 21,830 คน และได้คำนวณขนาดกลุ่มตัวอย่างโดยใช้วิธีทางสถิติ พบว่า*ผู้ที่จะเข้าร่วมในการวิจัยในครั้งนี้มีทั้งหมด 432 คน*

5. กระบวนการการวิจัยที่กระทำต่อผู้มีส่วนร่วมในการวิจัยนั้น จะดำเนินการดังนี้

ผู้วิจัยเป็นผู้ดำเนินการในการใช้แบบสอบถามโดยให้นิสิตตอบสอบถามด้วยตัวเอง หลังจากที่มีการเรียนการเรียนการสอนในรายวิชานั้น โดยจะขออนุญาตจากคณะ และอาจารย์ผู้สอนในการให้*นิสิตตอบแบบสอบถามเรื่อง ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย รวมทั้งหมด 40 ข้อ โดยนิสิตจะใช้เวลาในการตอบแบบสอบถามประมาณ 20 นาที เป็นการตอบแบบสอบถามเพียงครั้งเดียว* โดยการเข้าร่วมในงานวิจัยนี้ไม่มีความเสี่ยงหรือผลเสียที่จะเกิดขึ้นกับผู้ที่มีส่วนร่วมในงานวิจัยนี้

6. กระบวนการให้ข้อมูลแก่ผู้มีส่วนร่วมในการวิจัย ผู้วิจัยมีการชี้แจงรายละเอียดให้กับท่านเกี่ยวกับงานวิจัยในครั้งนี้ ซึ่งข้อมูลที่จะแจ้งได้แก่ การตอบแบบสอบถาม และสอบถามถึงความสมัครใจในการเข้าร่วมในการทำวิจัยครั้งนี้กับท่าน เมื่อท่านยินยอมเข้าเป็นส่วนหนึ่งของการวิจัยครั้งนี้ ผู้วิจัยจะให้ท่านเซ็นชื่อเพื่อเป็นการแสดงความยินยอม

7. การวิจัยนี้ไม่มี**อันตรายหรือความเสี่ยง**ที่อาจเกิดขึ้นแก่ผู้มีส่วนร่วมในการวิจัย

8. **ประโยชน์**ในการเข้าร่วมวิจัย ประโยชน์สำหรับผู้มีส่วนร่วมในการวิจัยคือ การสร้างความตระหนักในการอ่านฉลากโภชนาการ ก่อนบริโภคอาหาร และให้ความสำคัญในการอ่านฉลากโภชนาการ ซึ่งจะช่วยให้นิสิตเลือกบริโภคอาหารที่จำเป็นต่อความต้องการของร่างกาย ส่วนประโยชน์สำหรับส่วนรวม คือ ผลจากงานวิจัยนี้ทำให้ทราบถึงระดับค่วามรู้ ระดับการรับรู้ และพฤติกรรมการอ่านฉลากโภชนาการของวัยรุ่นใน

* ตัวเอียง หมายถึง คำอธิบาย ไม่ต้องระบุในเอกสาร

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ปัจจุบัน ซึ่งจะเป็นประโยชน์ต่อผู้ที่มีส่วนในการรับผิดชอบ เช่น กระทรวงสาธารณสุข จะสามารถรณรงค์ให้มีการตระหนักและเห็นคุณค่าของการอ่านฉลากโภชนาการก่อนบริโภคอาหาร

9. การเข้าร่วมในการวิจัยของท่านเป็นการเข้าร่วมโดย**สมัครใจ** และสามารถ**ปฏิเสธ**ที่จะเข้าร่วมหรือ**ถอนตัว**จากการวิจัยได้**ทุกขณะ** โดยไม่ต้องให้เหตุผลและไม่สูญเสียประโยชน์ที่พึงได้รับ และไม่มีผลต่อการเรียนของท่านแต่อย่างใด

10. **ข้อมูล**ที่เกี่ยวข้องกับผู้เข้าร่วมในการวิจัยจะเก็บเป็น**ความลับ** หากมีการเสนอผลการวิจัยจะเสนอเป็นภาพรวม ข้อมูลใดที่สามารถระบุถึงตัวท่านได้จะไม่ปรากฏในรายงาน

11. *ท่านจะได้รับปากกาเป็นของที่ระลึกที่ให้ความร่วมมือในการตอบแบบสอบถามแก่ผู้วิจัย*

12. หากผู้เข้าร่วมในการวิจัยไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าวสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147 หรือ 0-2218-8141 โทรสาร 0-2218-8147 E-mail: eccu@chula.ac.th

เลขที่โครงการวิจัย 043.1/57

วันที่รับรอง - 1 พ.ค. 2557

วันหมดอายุ 30 เม.ย. 2558

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หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

ทำที่.....

วันที่.....เดือน.....พ.ศ. .....

เลขที่ของผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า ซึ่งได้ลงนามท้ายหนังสือนี้ ขอแสดงความยินยอมเข้าร่วมโครงการวิจัย

ชื่อโครงการวิจัย *ปัจจัยที่มีความสัมพันธ์กับการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย*

ชื่อผู้วิจัย นายณัฐพงศ์ สุขทั่วญาติ

ที่อยู่ที่ติดต่อ บ้านเลขที่ 9/4 หมู่ 3 ตำบล แม่คำมี อำเภอเมืองแพร่ จังหวัดแพร่

โทรศัพท์ 086 7977272

รับรองโครงการวิจัย 043.1/57

วันที่รับรอง - 1 พ.ค. 2557

วันหมดอายุ 30 พ.ย. 2558

ข้าพเจ้า ได้รับทราบรายละเอียดเกี่ยวกับที่มาและวัตถุประสงค์ในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ความเสี่ยง/อันตราย และประโยชน์ซึ่งจะเกิดขึ้นจากการวิจัยเรื่องนี้ โดยได้อ่านรายละเอียดในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด และได้รับคำอธิบายจากผู้วิจัย จนเข้าใจเป็นอย่างดีแล้ว

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ ตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย โดยข้าพเจ้ายินยอมให้ผู้วิจัยใช้แบบสอบถาม เรื่อง ปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการอ่านฉลากโภชนาการของนิสิตจุฬาลงกรณ์มหาวิทยาลัย *ทั้งหมด 81 คำถาม* โดยใช้เวลาในการตอบแบบสอบถามประมาณ 20 นาที โดยข้อมูลของผู้ที่ตอบแบบสอบถามจะเก็บไว้เป็นความลับ

ข้าพเจ้ามีสิทธิถอนตัวออกจากการวิจัยเมื่อใดก็ได้ตามความประสงค์ โดยไม่ต้องแจ้งเหตุผล ซึ่งการถอนตัวออกจากการวิจัยนั้น จะไม่มีผลกระทบในทางใดๆ *ต่อการเรียน*ของข้าพเจ้าทั้งสิ้น

ข้าพเจ้าได้รับคำรับรองว่า ผู้วิจัยจะปฏิบัติต่อข้าพเจ้าตามข้อมูลที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และข้อมูลใดๆ ที่เกี่ยวข้องกับข้าพเจ้า ผู้วิจัยจะเก็บรักษาเป็นความลับ โดยจะนำเสนอข้อมูลการวิจัยเป็นภาพรวมเท่านั้น ไม่มีข้อมูลใดในการรายงานที่จะนำไปสู่การระบุตัวข้าพเจ้า

หากข้าพเจ้าไม่ได้รับการปฏิบัติตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147, 0-2218-8141 โทรสาร 0-2218-8147 **E-mail: eccu@chula.ac.th**

ข้าพเจ้าได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน ทั้งนี้ข้าพเจ้าได้รับสำเนาเอกสารชี้แจงผู้เข้าร่วมการวิจัย และสำเนาหนังสือแสดงความยินยอมไว้แล้ว

ลงชื่อ.....
(นายณัฐพงศ์ สุขทั่วญาติ)
ผู้วิจัยหลัก

ลงชื่อ.....
(.....)
ผู้มีส่วนร่วมในการวิจัย

ลงชื่อ.....
(.....)
พยาน

VITA

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