ความรู้ด้านโภชนาการทัศนคติเกี่ยวกับอาหารพฤติกรรมการบริโภคอาหารและภาวะโภชนาการของนักศึกษาสาธารณสุขศาสตร์ มหาวิทยาลัยอุบลราชธานี

Nutritional Knowledge, Attitude toward Food, Dietary Behavior, and Nutritional Status among Public Health Students, Ubonratchathani University

มินตรา สาระรักษ์ [1*], เมรีรัตน์ มั่นวงศ์ [2], ปัณฑิตา สุขุมาลย์ [3], พัจนภา วงษาพรหม [4]

Mintra Sararuk [1*], Mereerat Manwong [2], Phandita Sukhumal [3], Patnapa Wongsaprom

Received: 12 November 2013 ; Accepted: 28 February 2014

บทคัดย่อ

การวิจัยครั้งนี้เป็นการวิจัยแบบภาคตัดขวาง มีวัตถุประสงค์เพื่อศึกษาความรู้ด้านโภชนาการ ทัศนคติเกี่ยวกับอาหาร พฤติกรรมการบริโภคอาหาร ภาวะโภชนาการ และ ปัจจัยที่มีผลต่อภาวะโภชนาการ ศึกษาในนักศึกษาสาธารณสุขศาสตร์ มหาวิทยาลัยอุบลราชธานี ภาคการศึกษาต้น ปีการศึกษา 2555 จำนวน 335 คน รวบรวมข้อมูลโดยใช้แบบสอบถาม วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนา และวิเคราะห์ปัจจัยที่มีผลต่อภาวะโภชนาการ โดยใช้สถิติการถดถอยเชิงพหุแบบลอจิสติค ที่ระดับนัยสำคัญ $p < 0.05$

ผลการศึกษา: ในกลุ่มนักศึกษา พบว่า ระดับความรู้ด้านโภชนาการ อยู่ในระดับปานกลาง ร้อยละ 59.7 และความรู้ที่ตอบถูกมากที่สุด ร้อยละ 99.1 ได้แก่ ก่อนที่จะซื้อผลิตภัณฑ์อาหาร เช่น นม อาหารกระป๋อง จะต้องพิจารณาวันเดือนปีที่ผลิตหรือวันหมดอายุ ส่วนความรู้ด้านโภชนาการที่ตอบผิดมากที่สุด ร้อยละ 88.7 ได้แก่ การชั่งน้ำหนักและวัดส่วนสูง เพื่อประเมินภาวการณ์เจริญเติบโตของตนเอง โดยการใช้กราฟของกรมอนามัยเป็นเกณฑ์ที่ไม่เหมาะสำหรับนักศึกษา และพบว่า มีทัศนคติด้านอาหารอยู่ในระดับสูง ร้อยละ 91.6 และ มีทัศนคติเกี่ยวกับอาหารที่เหมาะสม ได้แก่ ไม่เห็นด้วยหากต้องการลดน้ำหนัก ควรงดบริโภคอาหารมื้อเช้า คิดเป็นร้อยละ 92.8 และพบว่า มีทัศนคติที่ไม่เหมาะสม ได้แก่ ไม่เห็นด้วยกับคำกล่าวที่ว่าควรหลีกเลี่ยงการเติมน้ำตาล เกลือหรือน้ำปลาในอาหารที่ปรุงมาแล้ว เพื่อป้องกันโรคร้อยละ 29.0 มีพฤติกรรมด้านการบริโภคอาหารในระดับปานกลาง ร้อยละ 88.2 พฤติกรรมการด้านการบริโภคอาหารที่เหมาะสม มากที่สุด ได้แก่ การล้างเนื้อสัตว์ ผัก และ ผลไม้ให้สะอาดก่อนปรุงอาหาร โดยปฏิบัติเป็นประจำร้อยละ 58.9 พฤติกรรมที่ยังไม่เหมาะสมมากที่สุด ได้แก่ ไม่ได้รับประทานอาหารมื้อเช้า โดยปฏิบัติเป็นประจำร้อยละ 19.1 ภาวะโภชนาการ พบว่า มีเส้นรอบเอวเกินเกณฑ์มาตรฐาน ร้อยละ 11.9 และมีระดับดัชนีมวลกายปกติร้อยละ 51.3 ปัจจัยที่มีผลต่อภาวะโภชนาการอย่างมีนัยสำคัญทางสถิติ ($p<0.05$) ได้แก่ ระดับความรู้ด้านโภชนาการ

จากผลการศึกษา พบว่า นักศึกษายังมีความรู้ ทัศนคติและพฤติกรรมทางด้านการบริโภคอาหารในบางประเด็นที่อาจก่อให้เกิดปัญหาสุขภาพในระยะยาวได้ แนะนำให้อาจารย์ผู้สอนและผู้เกี่ยวข้อง ควรมีการจัดเนื้อหาในการจัดการเรียนการสอนและกิจกรรมการให้สุขศึกษา และการส่งเสริมสุขภาพทางด้านโภชนาการ โดยเฉพาะอย่างยิ่งเรื่องแนวทางการบริโภคอาหารให้ปลอดภัย เพื่อที่จะส่งเสริมการมีความรู้ ทัศนคติ และพฤติกรรมการบริโภคอาหารที่เหมาะสมที่จะเป็นประโยชน์ต่อนักศึกษาต่อไป

คำสำคัญ : ความรู้ด้านโภชนาการ ทัศนคติเกี่ยวกับอาหาร พฤติกรรมการบริโภคอาหาร ภาวะโภชนาการ นักศึกษาสาธารณสุขศาสตร์

[1,2] ผู้ช่วยศาสตราจารย์, วิทยาลัยแพทยศาสตร์และการสาธารณสุข มหาวิทยาลัยอุบลราชธานี

[3,4] อาจารย์, วิทยาลัยแพทยศาสตร์และการสาธารณสุข มหาวิทยาลัยอุบลราชธานี

[1,2] Assistant Professor, College of Medicine and Public Health, Ubonratchathani University, Thailand

[3,4] Lecturer, College of Medicine and Public Health, Ubonratchathani University, Thailand

** Corresponding author: Mintra Sararuk , Department of Public Health, College of Medicine and Public Health, Ubonratchathani University, Ubonratchathani 34000, Thailand. E-mail: msararuk@hotmail.com*

Abstract

This cross-sectional research aimed to study nutritional knowledge, nutritional attitude, dietary behavior, nutritional status and factors influencing nutritional status of Public Health students. The population of the research was 335 Public Health students in the college of Medicine and Public Health at Ubonratchathani University. Data were collected by the completion of self-administered questionnaires at first semester, 2012 and analyzed by the use of frequencies, percentages, and multiple logistic regressions at $p < 0.05$.

The results showed that 59.7% of Public Health students had a moderate level of nutritional knowledge. Most of them (99.1%) gave correct answers regarding the consideration manufacture and expiration dates before they purchased food products such as milk and canned food. On the other hand, they did not have knowledge about height and weight measurements in their assessment of Division of Health's growth. A large number (91.6%) of them had a high level of appropriate attitude toward food. Most of them (92.8%) disagreed with skipping breakfast to reduce their weight, and 29.0% disagreed with the statement "One should avoid adding sugar, salt and fish source in cooked foods for disease prevention." The majority (88.2%) of their dietary behavior was assessed to be at a moderate level. Over half (58.9%) washed fresh vegetable, fruit, and meat before cooking. A minority (19.1%) did not have breakfast. Approximately half of them (51.3%) had a normal body mass index (BMI), but 11.9% had a high waist circumference. The factor influencing the nutritional status statistical significance at $p < 0.05$ was a level of nutritional knowledge.

This study suggests that lecturers and/or relevant organizations should focus on health education and health promotion regarding nutrition to promote proper knowledge, attitude and food consumption that is beneficial to the students.

Keywords : Nutritional Knowledge, Attitude toward food, Dietary Behavior, Nutritional Status, Public Health Students

Introduction

Consuming excessively and obesity are public health problems that not only affect people's health but also incur financial costs in attending to the needs of those suffering resultant diseases. Campaigns to increase an awareness of correct nutrition are urgently needed[1]. The choice of food for many young people nowadays is influenced by different media outlets, so it is not surprising that there were numerous instances of improper consuming behavior. Young people usually consume high levels of flavoring, sugar, and fat, but low levels of fruit and vegetable. The consumption of fat is closely related to heart diseases, some types of cancer, and obesity[2] and its over-consumption could cause irregularities in the absorption and digestion of foods[3].

A survey conducted by the Health Department in 2008 on food and nutritional status found that 17.25% of people aged 15 to 18 years clearly showed levels of over-eating and it was more prevalent in urban than in rural areas. This survey of Thai students' health found that (10%) were at risk of being overweight and consumed salty food (27.8%), fatty food (33.7%), and soft drink (32.1%)[4]. Prasopsak (2009) studied the consuming habits of university students at private and public universities in Bangkok and found that 66.7% were influenced by the fashions of fast foods and that their favorite fast food was fried chicken[5]. Musiktong et al. (2010)[6] conducted a study on nutritional knowledge, attitude toward food, consuming habit, and nutritional status of nursing students at Mahidol University and found that they had moderate levels of nutritional knowledge and attitude toward food (averaging 67.2% and 77.6% respectively). However, 57.4% had poor consuming behavior. Results showed that 11.0% were overweight or fat and more than 45.5% had accumulated fat.

Sararuk et al. (2008)[7] conducted a study on fast food and the health of students at Ubonratchathani University and found that 80% had proper knowledge about food consumption. This study revealed some confusing results: (i) just under one-third (31.4%) of respondents

answered “yes” to the statement that young people require more energy and thus can consume more fatty foods without getting fat: (ii) over half (54.2%) disagreed that frequent consumption of roasted or grilled food can lead to cancer; (iii) 13.4% disagreed that fatty food can put consumers at the risk of heart disease; (iv) high-risk consuming behavior was shown by the fact that 43.5% and 44.1% regularly ate crispy snack and instant noodle respectively; (v) soft drink, green tea, and meat were regularly consumed by 27.2%, 23.3%, and 23.2% of the students respectively. These findings indicated that the consuming behavior of young Thais remains a big issue and presents a great challenge.

Public Health students at Ubonratchathani University were in early adulthood and were required to be good models in health behavior, health promotion, and quality of life. Therefore it was essential for them to be equipped with nutritional knowledge, positive attitude toward food, good consuming habit, and good nutrition. At present, fast foods were pervasive but their nutritional values were low and undesirable as they were rich in sugar and fat but low in fiber. Such foods are popular among young people[8].

The researchers aimed to collect data about the nutritional knowledge, attitude toward food, consuming behavior, and nutritional status of Public Health students at Ubonratchathani University and develop guidelines for instructions in nutrition.

Materials and Methods

Data were collected by self-administered questionnaires during July and August, 2012 of 335 Public Health students in the College of Medicine and Public Health at Ubonratchathani University. The questionnaire consisted of 5 parts. Part 1 focused on the demographic data of the students, such as gender, year of study, income, sufficiency of income, conditions of present residence, and ways of obtaining information about food and nutrition, use of drugs, and dietary supplements which had an effect on body weight. Part 2 was 18 questions on nutritional knowledge based on a concept of 9 principles of nutrition[3] Part 3 was 25 questions on attitude toward food. Part 4 contained 30 questions on dietary behavior, and part 5 concentrated on nutritional status, collecting such information as weight, height, and waist measure ment.

Content validity was examined by 3 experts and a reliability test was completed by 30 Public Health students at Sirindhorn College of Public Health, Ubonratchatani Province. The Cronbrach’s alpha coefficient of each part was as follows: nutritional knowledge = 0.6151, attitude toward food = 0.7042, and dietary behavior = 0.7053

Ethical Approval

This research was conducted in accordance with the principles of the Declaration of Helsinki and approved by the Ethical Review Committee, Ubonratchatani University on 17th October, 2012.

Data Analysis

Frequencies and percentage were used to interpret the data which related to demographic charac teristics, nutritional knowledge, attitude toward food, and dietary behavior. Multiple logistic Regressions was used to determine the factors influencing nutritional status of the Public Health students. The level of statistical significance was $p < 0.05$.

Results

Demographic characteristics

It was found that 79.7% of the Public Health students were females. The number of the students from each year was almost the same. Most (37.2%) of them received more than 5,000 baht a month, and 72.6% stayed in a private dormitory. A large number (83.2%) obtained information on food or nutrition, and 86.3% were exposed to information via magazines/ journal, the Internet, and family members. The majority (83.2%) of them had no personal diseases, and 50.9% of those who had some personal diseases suffered from allergies. Almost all of them (96.1%) did not use drugs or dietary supplements.

Nutritional Knowledge of the public health students

It was found that most (99.1%) of them gave the correct answer about checking products and expiry dates before buying. Most (94.6%) recognized that they had a variety of vegetables to obtain sufficient vitamins and minerals for physical needs. However, there were some incorrect responses. For example, 88.7% answered incorrectly in weight and height were measured to assess one's growth by using a Division of Health's graph which was not suitable for students. (Table 1).

As regards a level of nutritional knowledge of them, it was found that they had a moderate level of nutritional knowledge (59.7%).

Table 1 Percentage of nutritional knowledge of Public Health students which classified in each item (N=335)

Knowledge	Right answer	Wrong answer
1. Good health requires a proper proportion of nutrition and energy, that is, 2,000 calories/ day or regular health care. *	30.4	69.6
2. Weight and heights were measured to assess one's growth by using a graph was not suitable for students.	11.3	88.7
3. Doing a chore is equivalent to an exercise. *	51.0	49.0
4. To get sufficient nutrients for bodily needs, one has to take a variety of food and a supplementary diet everyday to keep healthy. *	50.4	49.6
5. Taking noodles or bread can compensate for rice intake. *	77.0	23.0
6. White milled rice gives more carbohydrate and other minerals than less milled rice and it has more benefit to the body. *	77.9	22.1
7. Taking a supplementary diet is necessary as it can prevent diseases. *	62.7	37.3
8. A regular intake of hand-milled rice can prevent numbness.	86.0	14.0
9. An egg is the best source of protein.	81.5	18.5
10. Having a wide variety of vegetables gives adequate vitamins and minerals for bodily needs.	94.6	5.4
11. Vegetable and fruit of yellow color contain carotene and vitamin A. However, it has to be cooked in water.	50.1	49.9
12. Teenage should drink one or two glasses of milk or eat one cup of yogurt a day.	47.8	52.2
13. Frying by using a corn oil can reduce the risks of developing fat clotting in a blood vessel.	57.9	42.1
14. Consuming food which are too sweet or too salty does not adversely affect health. Instead it is good for health as it is conducive to hunger. *	89.6	10.4
15. Regular consumption of soft drinks and alcoholic drinks leads to a risk of developing rickets.	78.2	21.8
16. Dried bean, pepper, onion, and garlic contaminated with fungi do not cause diseases if washed.	73.4	26.6
17. Before buying food products, it is essential to check production and expiry dates. *	99.1	0.9
18. The nutritional value of junk food is equal to that of order-based cooked food. *	80.3	19.7

* negative statements

Public Health students' attitude toward food

Results showed that the Public Health students held appropriate attitudes in answering both positive and negative questions on a number of issues. The majority (92.8%) disagreed with the idea that one should skip breakfast if one needed to lose weight, 92.5% agreed with the point that overeating and lack of exercise led to obesity, 29.0% disagreed with the avoidance of adding sugar, salt, and/or fish sauce when they cooked food to prevent disease or illness, 12.0% agreed that sweets looked more attractive in bright and beautiful colors, 20.9% agreed that dried food like dried peanut, dried pepper, onion, and garlic contaminated with fungi could be useable if it was washed, and 21.4% believed that vegetable with holes caused by insects should be selected for purchase (Table 2).

Classification of the attitude toward food based on the overall score of three groups (High, Moderate, and Low) revealed that 91.6% of the students had the highest levels of attitude toward food.

Table 2 Percentages of students' attitude toward food which classified in each item (N=335)

Attitude	Level of attitude			
	High agree-ment	Moderate agreement	Less agreement	dis agreement
1. To be healthy, one has to take only a balanced diet every day. *	40.0	40.0	10.1	9.9
2. Over eating and not doing exercise are responsible for being fat.	92.5	6.3	0.9	0.3
3. Regular weight care can prevent obesity.	74.8	23.1	2.1	-
4. To reduce weight, one should not take breakfast. *	1.5	2.4	3.3	92.8
5. White polished rice give nutritious as unpolished. *	3.0	7.8	22.8	66.4
6. An egg is a protein source suitable for young people.	46.5	45.4	8.1	-
7. One should select and buy fruit with some holes in them.	32.5	46.1	16.9	4.5
8. Excessive eating of durian, ripe mango, and jackfruit leads to risks of obesity.	55.0	31.0	10.1	3.9
9. Pickled fruit and fresh fruit give equal vitamins and minerals. *	0.9	1.8	19.4	77.9
10. Fried potatoes and crispy snacks should be avoided.	62.8	22.5	10.5	4.2
11. Raw meat if thoroughly cooked does not taste good. *	1.2	7.5	21.8	69.5
12. Frequent consumption of meatball is not harmful to health. *	0.6	5.4	21.3	72.7
13. Food with strong flavor should be avoided.	69.8	19.1	7.2	3.9
14. White colored sugar is more nutritious than brown colored sugar. *	6.3	20.6	32.2	40.9
15. Preserved fruit as snacks that are useful as well as fresh fruit.*	0.9	2.7	13.4	83.0
16. Sweets in beautiful colors look attractive.*	12.0	22.2	29.0	36.8
17. Flavoring, powder should be added to enhance food taste. *	4.5	14.4	48.2	32.9
18. Regular 10 minutes of exercise a day can prevent diseases. *	26.0	34.6	28.4	11.0

Attitude	Level of attitude			
	High agree-ment	Moderate agreement	Less agreement	dis agreement
19. Young people can consume as many alcoholic drinks as they want.*	1.5	5.1	8.7	84.7
20. Consuming salty food means getting more iodine. *	2.1	7.5	24.0	66.4
21. Young people have food rich in fat to compensate for energy lost each day. *	2.4	10.1	22.4	65.1
22. Canned food which shows signs of rot but has not expired is eatable. *	1.5	3.6	14.0	80.9
23. One can skip food one time and compensate for it some other time. *	0.6	6.9	28.4	64.1
24. To avoid diseases, one should not add sugar, salt, or fish sauce to cooked food.	11.6	33.1	26.3	29.0
25. Dried bean, pepper, onion, and garlic contaminated with fungi are edible , if thoroughly washed, *	8.7	12.2	18.5	60.6

* negative statements

Dietary behavior of Public Health students

On a positive note, the study found that 58.9% of them regularly washed meat, vegetable, and fruit before cooking. Most (58.4%) read labels and checked products and expiry dates before buying products. However, 19.1% did not have breakfast, 16.7% ate their favorite food even when they were not hungry, 53.7% ate fatty meat, 47.6% use an extra spoon while having food with others, 48.9% consumed instant noodles and frozen food, and 40.0% liked strong tasting food (Table 3).

The study found that 88.2% of them had dietary behavior at a moderate level.

Table 3 Percentages of dietary behavior of Public Health students which classified in each item (N=335)

Dietary behavior	Behavioral level			
	regular	often	sometimes	never
1. Having food at a scheduled time.	5.1	22.7	66.0	6.2
2. Having food from the five food groups.	9.9	34.3	51.0	4.8
3. Not having breakfast. *	19.1	43.9	36.1	0.9
4. Having same food repeatedly for several days. *	12.3	48.5	37.1	2.1
5. Alternating rice as staple food with food containing flour.	21.5	46.0	31.0	1.5
6. Having unpolished rice or bread.	3.9	20.9	66.0	9.2
7. Having instant noodles or frozen food. *	10.1	38.8	49.9	1.2
8. Having cereal, dried bean, or bean products.	5.1	23.0	67.2	4.7
9. Having fatty meat. *	11.6	42.1	43.3	3.0
10. Having fiber food like fruit and vegetable.	23.0	51.0	25.4	0.6
11. Having junk food like a sandwich and donut. *	6.3	30.7	61.2	1.8

Dietary behavior	Behavioral level			
	regular	often	sometimes	never
12. Having sweet soft drink, cold tea, and cold coffee. *	1.2	38.5	39.7	20.6
13. Drinking at least 6-8 glasses of clean water a day.	36.7	38.8	21.8	2.7
14. Drinking at least one glass of milk a day.	17.3	29.6	48.4	4.7
15. Having sweet snake. *	11.0	40.3	46.9	1.8
16. Having food which is too sweet or salty. *	11.0	29.0	45.4	14.6
17. Having crispy snack. *	11.9	31.3	54.4	2.4
18. Having alcoholic drink. *	3.3	4.8	43.0	48.9
19. Eating half-cooked meal. *	1.5	3.6	39.1	55.8
20. Eating steamed or boiled food.	19.1	51.9	28.1	0.9
21. Washing hands before eating.	32.9	47.6	18.0	1.5
22. Using an extra spoon while others are eating with their own spoon from the one dish.	14.4	33.2	49.1	3.3
23. Eating hot food from a plastic plate or foam vessel. *	4.5	21.9	63.7	9.9
24. Cleaning meat, vegetable, and fruit before cooking.	58.9	32.1	7.2	1.8
25. Reading label and products and expired dates before buying products.	58.4	33.5	7.8	0.3
26. Eating meatball or grilled squid as sold from a cart. *	8.7	28.7	47.7	14.9
27. Eating newly-cooked food.	33.8	55.7	9.9	0.6
28. Eating food as advertised. *	5.4	26.3	62.0	6.3
29. Eating a favorite food despite being full. *	16.7	30.7	47.2	5.4
30. Doing a 30-minute exercise within 2 hours of eating food.	2.7	11.0	63.6	22.7

*negative statement

Nutritional status of Public Health students

Based on data related to waistline measurements and body mass index, it was found that 40 (11.9%) of them had a waistline above a set standard and 50% showed a normal body mass index, 28.7% were thin, and 20.0% were fat (Table 4).

Table 4 Numbers and percentages of nutritional status of Public Health students (N=335)

Nutritional Status	No.	%
Waistline		
-normal	295	88.1
-above standard criteria	40	11.9
Body mass index (BMI)		
-thin (< 18.5 kg/m^2)	96	28.7
-normal (18.5 - 22.9 kg/m^2)	172	51.3
-overweight (23.0 - 24.9 kg/m^2)	26	7.8
-obese (25.0 - 29.9 kg/m^2)	41	12.2

Factors influencing nutritional status of Public Health students

It was found that knowledge level influenced the nutritional status of the students with a statistical significance at $p < 0.05$ (Table 5).

Table 5 Factors affecting nutritional status were analyzed by a multiple logistic regression

Factors	Crude OR	OR adj.	95%CI of OR adj.	p-value
Getting information on foods or nutrition				
-got				
-never got	2.053	3.575	0.579 – 22.088	0.170
Using drugs or food supplements				
-used	5.089	3.477	0.483 – 25.027	0.216
-never used				
Knowledge level				
-low	1.00			*0.049*
-moderate	1.691	0.204	0.058 - 0.725	*0.014*
-high	0.805	0.370	0.069 - 1.978	0.245

Discussion

Nutritional knowledge of students

The study found that 59.7% of them had a moderate level of knowledge. Just under one-third (30.1%) of the population in the study was first year students and, of these, 16.8% had never received any information about food or nutrition and 32.2% received information from their friend. This may have accounted for their moderate knowledge level on nutrition. This finding was consistent with the study conducted by Musiktong et al.[6] who studied the knowledge of nutrition, attitude toward food, consuming habit, and nutritional status of Nursing students at Mahidol University and found that 67.2% of the students had a moderate nutritional knowledge. The item that the Public Health students got correct the most of them (99.1%) was the need to check the products and expiry dates before purchasing products. The item they got wrong the most (88.7%) was weight and height were measured to assess one's growth by using a Division of Health's graph was not suitable for students. Practically, weight and height measurements should be conducted monthly to examine nutritional status. For a child (5-18 years), a weight for age value according to a normal criterion was used[9]. For an adult, a body mass index (BMI) ranging between 18.5-22.9 kg/m^2 was used. If the index was lower than 18.5 kg/m^2, the person is considered thin, a body mass index (BMI) between 23.0.-24.9 kg/m^2, the person was considered of normal weight, and over 25.0 kg/m^2 was considered obese[10].

Attitudes towards food

It was found that 91.6% of them had a high level of attitudes towards food. This finding was not in line with the study undertaken by Musiktong et al[6]. found that 77.6% of the Nursing students had a moderate level of overall attitude toward food. The study involving the Public Health students found that 92.8% disagreed with the idea of skipping breakfast to lose weight. Nutritional researchers recommended that regular breakfast was important and it could reduce weight as food intake could be controlled at the next meal. Skipping breakfast was likely to encourage the person to eat more food at lunch, a major cause of excessive weight and obesity[11].

The study showed a number of incorrect attitude to food. Students (29.0%) did not agree with the avoidance of the addition of more sugar, salt, and/or fish sauce to cooked food helped to prevent illness. Thai people favor food with strong taste and enhanced flavor. Excessively sweet and/or salty food were harmful to health and consuming more than 6 grams of sodium a day could lead to high blood pressure, especially for those who did not consume fruit or vegetable. There was high risk of the development of stomach cancer associated with the consumption of salty food. It was recommended that unnecessary food flavoring should be avoided and traditional Thai food more beneficial to health should be eaten[12].

Food consumption behavior

The study found that the food consumption behavior of 88.2% of them was moderate level. There were three aspects of improper behavior. About one-fifth (19.1%) did not have a regular breakfast, 16.7% ate their favorite food even when they had just eaten and/or were full, and 11.9% had regular crispy snack. In addition, 53.7% ate fatty meat, 52.4% used an extra spoon while eating food with others, half (49.9%) ate instant noodle or frozen food, and 40.0% ate food with strong taste.

On a positive note, 58.9% of students washed and cleaned meat, fruit, and vegetable before cooking, 58.6% read labels and checked product dates of food and drug, and expiry dates before buying items, and 55.8% never ate half-cooked or half raw food.

Students' nutritional status

The study found that 40 (11.9%) of them had a waistline measurement above the standard. Half had a normal body mass index, 28.7% were classified as thin, and 20.1% were considered overweight and obese. These results were in congruence with those found in the study conducted by Musiktong et al. at Mahidol University[6]. The results of the present study showed that 30.0% of them had a body mass index lower than normal and 11.0% had a body mass index above. Some of them had a large waistline, and were overweight and obese due to abnormal nutrition and/or excessive consuming, a situation that may lead to different kinds of illnesses such as obesity, diabetes and heart disease.

The students with a body mass index lower than 18.5 kg/m^2 may develop health problems such as food and vitamin deficiencies. Healthy nutrition meaned that a person consumed food as required by their physical need and the body can make the most use of the consumed nutrients[10].

Factors affecting a nutritional status by means of an analysis of a multiple logistic regression

The study found that nutritional knowledge level could influence students' nutritional status with a statistical significance ($p<0.05$). A possible explanation was that through today's online social networks, students were able to access information and/or gain knowledge on nutritional status through several widely-available channels. Ponsiri (2010)[13] studied knowledge, attitude, and consuming behavior of students of Ramkumhang University and found that 20% obtained knowledge on food and nutrition via different media, such as radio, television, and movies, and 16.6% from journals and magazines. It was also found that friend could play a key role regarding nutritional status as young people had the habit of imitating others who look physically good.

Recommendations

The study found that the participating students had a moderate level of nutritional knowledge. Some had incorrect attitude and some had improper consuming behavior. It is essential to overcome these deficiencies by encouraging them to seek additional knowledge both inside and outside the classroom. Such encouragement may come from campaigns and a club to increase knowledge about food and nutrition.

Some students had large waistline measurements which may lead to obesity, diabetes, high blood pressure and heart disease. It was important that these people became aware of their improper consuming behavior that may pose long-term health hazards.

Acknowledgements

The authors wish to thank the College of Medicine and Public Health, Ubonratchathani University for funding, the students who participated, and the staff of the Office of International Relations at Ubonratchathani University for assistance in English.

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