

## The Prevalence and Factors Related to Food Consumption Behaviors of Junior High School Students of Kamalasai School, Kamalasai District, Kalasin Province

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### Abstract

This research study is an analytical research with a cross-sectional education model. The objective of the study was to study the prevalence and factors related to food consumption behaviors of Junior High School students of Kamalasai School, Kamalasai District, Kalasin Province. By simple random method the random sample consisted of 262 people. The instrument was a questionnaire. The quality of the equipment was checked. Content accuracy and reliability Data were analyzed using descriptive, multiple logistic regression. The results found that 47.3 percent had a health literacy on food consumption in overall was at a medium level ( $\bar{x}$ =2.35, S.D.=0.54). When considering from each aspect, participants had medium level cognitive understanding ( $\bar{x}$ =2.73, S.D.=0.33) accessing health data and services, most had a medium level ( $\bar{x}$ =2.16, S.D.=0.62). communication skills, most had a medium level ( $\bar{x}$ =2.12, S.D.=0.58) In decision-making aspect, most had a medium level ( $\bar{x}$ =2.30, S.D.=0.62). In the aspect of media-literacy, most had a medium level ( $\bar{x}$ =2.70, S.D.=0.46). In self-management aspect, it was at a medium level ( $\bar{x}$ =2.10, S.D.=0.46). The result of the prevalence and factors that has a relation between health literacy and good food consumption behaviors found that health data and health services (AOR=2.30, 95%CI=1.40-3.84; P-value<0.001). Moreover, those with self-management had 1.85 times better than those with poor self-management (AOR=1.85, 95%CI=1.13-3.04; P-value=0.014) and Receiving useful food information through television advertisements (AOR=1.55, 95%CI=1.94-2.54;p-value=0.002). There should be a promotion of good self-management for promoting good health of the Junior High School students. Utilization of research results: create a project or provide knowledge, such as television media, in order to increase the ability to access food intake to benefit the body.

**Keywords :** Prevalence, Health literacy, Food consumption behaviors

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## ความชุกและปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการบริโภคอาหาร ของนักเรียนชั้นมัธยมศึกษาตอนต้น โรงเรียนกมลาลัย อำเภอกมลาลัย จังหวัดกาฬสินธุ์

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### บทคัดย่อ

การศึกษาวิจัยครั้งนี้เป็นวิจัยเชิงวิเคราะห์ โดยมีรูปแบบการศึกษาแบบภาคตัดขวาง มีวัตถุประสงค์เพื่อศึกษาความชุกและปัจจัยที่มีความสัมพันธ์ต่อพฤติกรรมการบริโภคอาหารของนักเรียนชั้นมัธยมศึกษาตอนต้น โรงเรียนกมลาลัย อำเภอกมลาลัย จังหวัดกาฬสินธุ์ โดยวิธีการสุ่มอย่างง่าย กลุ่มตัวอย่าง 262 คน เครื่องมือที่ใช้เป็นแบบสอบถาม มีการตรวจสอบคุณภาพของเครื่องมือ ความเที่ยงตรงเชิงเนื้อหาและค่าความเชื่อมั่น วิเคราะห์ข้อมูลสถิติเชิงพรรณนาและการวิเคราะห์การถดถอยพหุแบบลอจิสติก ระดับปานกลาง ( $\bar{X}$ =2.73, S.D.=0.33) ด้านการเข้าถึงข้อมูลสุขภาพฯ ระดับปานกลาง ( $\bar{X}$ =2.16, S.D.=0.62) ด้านการสื่อสาร ระดับปานกลาง ( $\bar{X}$ =2.12, S.D.=0.58) ด้านการตัดสินใจ ระดับปานกลาง ( $\bar{X}$ =2.30, S.D.= 0.62) ด้านการรู้เท่าทันสื่อ ระดับปานกลาง ( $\bar{X}$ =2.70, S.D.=0.46) ด้านการจัดการตนเอง ระดับปานกลาง ( $\bar{X}$ =2.10, S.D.=0.46) ความชุกและปัจจัยที่มีความสัมพันธ์ คือ ความสามารถในการเข้าถึงข้อมูลและการบริการสุขภาพได้มาก (AOR =2.32; 95%CI=1.40-3.84; p-value<0.001) การจัดการตนเองที่ดีจะมีพฤติกรรมการบริโภคอาหารที่ดีขึ้น (AOR=1.85; 95%CI=1.13-3.04; p-value=0.014) และการที่ได้รับการส่งเสริมด้านการบริโภคอาหารที่มีประโยชน์จากสื่อโทรทัศน์ 1.55 เท่า (AOR=1.55; 95%CI=1.94 - 2.54; p-value=0.002) การนำไปใช้ประโยชน์ เพื่อใช้จัดทำโครงการหรือให้ความรู้ เช่น สื่อโทรทัศน์ เพื่อเพิ่มความสามารถในการเข้าถึงเรื่องการบริโภคอาหารให้เกิดประโยชน์ต่อร่างกาย

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## Introduction

Nowadays, Thai society has changed in every aspect, including economy, culture and technology development. These changes have affected ways of life in the society, including the change of ways of life and health status of people (Institute for Population and Social Research, 2017). It is resulting in health issues. Nutrition is one of the severe problems of Thai society these days. One of the keys factors influencing the nutrition problems is consuming food with low nutrition that is high-energy food. This type of food usually lacks nutritional value and needed nutrients. This issue leads to the establishment of many policies and strategies of that nation that focuses on the solutions of the nutrition problems of people, especially school age children (Phusit Prakongsai, 2016). School age children have a fast-physical development and also fast-psychological development, such as the food selection behaviors which will develop during this age and these behaviors will remain with them in their adulthood. Consuming food with essential nutrients in an adequate amount is important for the children (Institute for Population and Social Research, 2018). Therefore, health behaviors involving nutrition need to be developed in the school age children.

The latest survey of food consumption behaviors of National Statistical Office in 2013 found that the children between the age of 6-14 years old like to consume fast food and sweet drinks. This type of food and drinks have nutrients with high energy but have very low protein and vitamin which will later lead to fat accumulation in the body. A lack of exercise, knowledge, and skills needed for healthcare (National Statistical Office, 2013) should not be overlooked and this issue needs to be solved properly.

Health literacy is a feature of people with skills and knowledge understanding of data access have good communication skills and have media literacy skills (Kitpapon Srithanee. (2017). If having these abilities and skills, it will help promote the correct eating behavior. In which the researchers applied the knowledge of health to cover which consists of 6 parts: access to health information and health services, knowledge, understanding, communication skills self-management skills Decision-making skills and media literacy (Nutbeam. D., 2000), (Montira Juntavaree , Peyanut Juntavaree, 2019)

Kamalasai School in Kamalasai District, Kalasin Province is a big institution. This school provides instructions for Matthayom 1-6 and consists of 2,500 students per year. The school has been facing with the nutrition problems continuously, such as the problem of selecting hygienic food for consumption, fast-food consumption behaviors, etc. These behaviors affect the students in daily life, and it creates excessive nutrition in the students which is the cause of various chronic diseases, such as obesity, diabetes mellitus, hypertension. It also affects students' health in the future (The Secondary Education Service Area Office. (2019)

In this study, researchers were interested in studying food consumption behaviors of Junior High School students of Kamalasai School, Kamalasai District, Kalasin Province in

order to use the collected data for setting a guideline, planning a project for solving the problems and decreasing unhealthy food consumption behaviors of the students as well as creating a learning source about the nutrition problems of students for those who are interested, including government and private sectors.

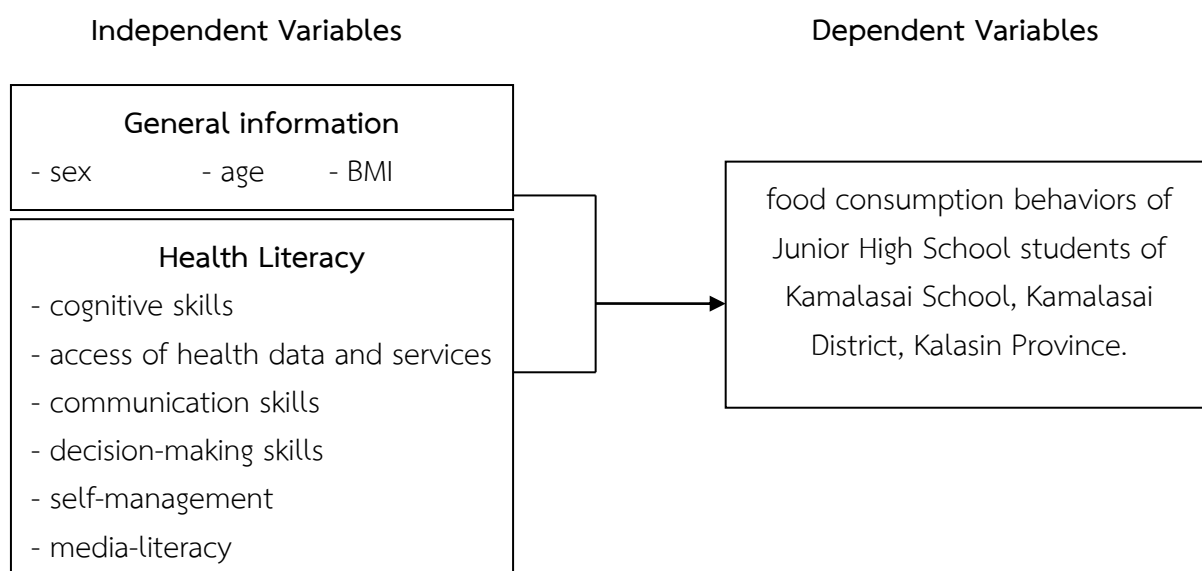
### Objective

1. To study the prevalence of food consumption behaviors of Junior High School students of Kamalasai School, Kamalasai District, Kalasin Province.
2. To study factors that has a relation between health literacy and food consumption behaviors of Junior High School students of Kamalasai School, Kamalasai District, Kalasin Province.

### Conceptual framework

Developing and enhancing the knowledge of the public. Is the creation and development of Individual ability to maintain a sustainable self-health Have a guideline for a consistent health system with the problems and needs of the people Exchange of one's own health information And able to anticipate potential health risks. The researcher then uses the concept of Health Literacy (Nutbeam, D., 2000), (Montira Juntavaree, Peyanut Juntavaree, 2019) to create a conceptual framework.

### Research Conceptual Framework



### Research methods

This research study is an analytical research with Cross-sectional study. The population used in this research is 1,233 Junior High School students at Kamalasai School who was studying a second semester of academic year 2019.

**Inclusion criteria :**

1. Currently studying at lower secondary level at Kamalasai School
2. Completed lower secondary courses in a second semester of the academic year 2018
3. Age between 12 - 16 years old

**Exclusion criteria :**

1. Do not pass the basic educational criteria
2. Those who are under 13 years old or over 15 years old
3. Those who are absent or take a leave on the data collection day
4. Those who deny or do not consent to provide the data

The sample group of 262 Junior High School students was calculated by using Multiple Logistic regression (Hsieh. et al, 1998)

$$n = \frac{P(1 - P)(Z_{1-\alpha} + Z_{1-\beta})^2}{[B(1 - B)(P_0 - P_1)^2]}$$

The sample group was randomly selected by using Simple Random Sampling until getting the set sample group size.

**Research tool**

The tool used for data collection was questionnaire which was divided into 3 parts. The first part was personal characteristics.

The second part was concerned with health knowledge, including understanding and the access of health data and services, communication skills, decision-making skills, self-management, media-literacy. Each aspect was evaluated by using the average assessment criteria by using group-based criteria (Wichireket Singh, 1995) divided into 3 levels as follows :

Average score 0.67 - 1.00 refers to the health literacy in each area of junior high school students is at a high level

Average score of 0.34– 0.66 refers to the that health literacy in each area of junior high school students is at a medium level.

Average score of 0.00 – 0.33 refers to the that health literacy in each area of junior high school students is at a low level

The third part was concerned with food consumption behaviors, including food consumption, types of food, food desire in each meal, and food nutrition.

**Rating criteria**

Average score 2.34 – 3.00 refers to the food consumption behavior in each area of junior high school students is at a high level.

Average score 1.67– 2.33 refers to the food consumption behavior in each area of junior high school students is at a medium level.

Average score 1.00 – 1.66 refers to the food consumption behavior in each area of junior high school students is at a low level

### Research tool

The assessment of questionnaires was conducted. By applying the 6 elements of health literacy from Nutbeam D. (2000) Indexes or indicators of questionnaires' quality were content validity and reliability.

**1. Content Validity** of the research tools: The questionnaires were proposed to specialists in order to check content validity, language, and assessment. The content validity of the tools : CVI of 0.87. The questionnaires are adjusted for use by 3 specialists.

**2. Reliability:** The researcher improved and adjusted the created questionnaires were suggested by the specialists. The 30 improved questionnaires were used for a try out on Junior high school students of Rajabhat Maha Sarakham University Demonstration School, Maha Sarakham who were not the sample group. The reliability test on knowledge is conducted by using: KR-20 (0.81). Data accessibility, communication skill, decision making skill, self-management, and media literacy were analyzed by using Cronbach's alpha coefficient (0.83) related to food were analyzed by using Cronbach's alpha coefficient (0.86)

### Rights protection for samples

Before conducting the collecting data, taking into account the ethics of the researchers and protecting the rights, the samples that participated in the samples were clarified the purpose of the study. Data collection methods and the benefits that the sample receives from joining As well as clarifying the rights of the sample. Which can stop entering Is a sample group without having to give reasons to the researcher And the sample group does not lose any benefits at all and the information in the questionnaire will be kept confidential, will not be disclosed and the results will be Assessments that are summarized as an overview for the purposes of the study only. This research has been approved by the committee. Ethics of research in humans from Sirindhorn College of Public Health, Ubon Ratchathani (Number IRB : SCPHBI002)

### Data analysis

1. Data were analyzed by using descriptive statistics. The general information, factors Related to Food Consumption Behaviors. The data is presented in the table by using frequency, percentage, arithmetic mean, standard deviation, minimum, and maximum.

2. The data analysis was used multiple logistic regression for finding Related to Food Consumption Behaviors. Adjusted OR is presented with confidence interval of 95%CI.

## Research results

The general information of the sample group revealed that the 55 percent of participants were males. 32.8 percent of the participants were between 12 – 16 years old. Most of them were 15 years old. 47.3 percent of the participants were overweight according to their body mass index. Only 47.30 percent of the sample group had their body mass index overweight between 23.0 – 24.9

**Table 1** General information of Kamalasai School, Kamalasai District, Kalasin Province (n=262)

General information	number	Percent
<b>Sex</b>		
Male	144	55.0
Female	118	45.0
<b>Age(year)</b>		
12-13	86	32.80
14-15	84	32.10
15-16	92	35.10
<b>BMI</b>		
<18.5( Underweight)	6	2.29
18.5 – 22.9 (Normal)	17	6.50
25.0 – 25.9 level 1 (Overweight)	124	47.33
25.0 – 25.9 level 2 (Overweight)	90	34.34
>30 (Obesity)	25	9.54

Food consumption behaviors were found in a moderate level ( $\bar{x}$  = 1.98, S.D. = 0.58). The respondents answered the most correct questions in the top 3. He had breakfast ( $\bar{x}$  = 2.37, S.D. = 0.62). He had eaten 5 groups ( $\bar{x}$  = 2.25, S.D. = 0.60) and you eat more than 1 dish or noodle in each meal ( $\bar{x}$  = 2.17, S.D. = 0.68), respectively. The most wrong question, the first 3 respondents are eating crispy snacks ( $\bar{x}$  = 1.55, S.D. = 0.54) You eat These include Fast carte ( $\bar{x}$  = 1.75, S.D. = 0.54) and you eat foods containing additives such as meatballs ( $\bar{x}$  = 1.81, S.D. = 0.58), respectively.

The health literacy on food consumption of the Junior High School students in overall was at a medium level ( $\bar{x}$  = 2.35, S.D. = 0.54). When considering from each aspect, most of the participants had Medium level Cognitive understandin ( $\bar{x}$  = 2.73, S.D. = 0.33). In the aspect of accessing health data and services, most had skills at a Medium level ( $\bar{x}$  = 2.16, S.D. = 0.62). In the aspect of communication skills, most had a good level of the skills ( $\bar{x}$  = 2.12, S.D. = 0.58) In decision-making aspect, most had the skills at Medium level ( $\bar{x}$  = 2.30, S.D. = 0.62). in the aspect of media-literacy, most had the knowledge at Medium level . ( $\bar{x}$  = 2.70, S.D. = 0.46). In self-management aspect, it was at a Medium level ( $\bar{x}$  = 2.10, S.D. = 0.63). The health literacy is divided into 6 aspects as follows Table 2

**Table 2** The health literacy is divided into 6 aspects (n=262)

The health literacy	$\bar{x}$	S.D.	Interpretation
1. Cognitive understanding of food consumption	2.73	0.33	High level
2. The access of health data and services	2.16	0.62	Medium level
3. Communication skill	2.12	0.58	Medium level
4. Decision making of food consumption	2.30	0.62	Medium level
5. Self- management of food consumption	2.10	0.63	low level
6. Medial literacy about of food consumption	2.70	0.46	High level
<b>total</b>	<b>2.35</b>	<b>0.54</b>	<b>Medium level</b>

The analysis of the prevalence and factors that has a relation between health literacy and good food consumption behaviors of the Junior High School students found that those with high access of health data and health services had 2.32 times better food consumption behaviors than those who had low access (95%CI = 1.40 - 3.84) with statistical significance (p-value = <0.001). as follows Table 3

**Table 3** Factors related to food consumption behavior of Junior High School students analyzed by using multiple logistic regression (n = 262)

Health literacy on food consumption	amount	%FCB	Adjust OR	95 % CI	P-value
1. The access of health data and services					<0.001*
- less accessibility	121	32.23	1		
- more accessibility	141	52.48	2.32	1.40-3.84	
2. Self-management					0.014*
- low	141	36.17	1		
- good	121	51.24	1.85	1.13-3.04	
3. Receiving useful food information through television advertisements					0.002*
- no	146	38.36	1		
- yes	116	49.14	1.55	1.94-2.54	

\*P-value<0.005

## Discussion

The health literacy on food consumption of the Junior High School students were at a good level because there had been a promotion on food consumption from teachers and medical staff as well as activities conducted by public health, and public relation in the school, such as putting up a poster, public announcement, courses related to food

consumption. Moreover, there was also a seminar for students every year which promoted the importance of food consumption. The students were usually concerned with beauty their look which made them more conscious on food consumption by choosing food that is useful, without chemicals, and have enough nutrients for the body. Most of the students lived in urban areas that could easily access to media and news. This result is not in accordance with Adisa Sungkathip (2017) who found that knowledge of students was at low level. With the sample being in rural areas and parents only had primary education, parents did not have time to educate their children and some also lived with grandparents.

In the past year, the school, the school had organized training for the food sellers in the cafeteria to distribute fresh, clean, quality food and always safe from chemicals. This is consistent with Weerachai Nuanchai et al. (2017) who found that the schools had a project to promote knowledge to distribute safe food which was guaranteed the quality of food stores from the Ministry of Public Health

Food consumption behavior of lower secondary school students was at a good level. When studying factors related to good food consumption behaviors in overall, health literacy did not correlate with food consumption behaviors. This is contrast with Nucharin Sutthiwarotmakul. (2018) who found that health intelligence is related to health behaviors of school age children.

But when studying the internal relationships of each aspect of the health literacy in food consumption, it was found that only 2 aspects had the relationship with food consumption behavior, namely self-management and access of data and health services. This data is consistent with Nucharin Sutthiwarotmakul. (2018) who found that the skills in accessing health data were highest and followed by decision-making skills. The health intelligence in self-management skills and media literacy skills had a statistically significant positive relationship between food consumption behavior ( $p < 0.01$  and  $< 0.05$ , respectively)

### **Limited of research**

This research has collected data 1 time which may cause the research results to not cover the variables that will affect the research results. There should be constant monitoring of student behavior.

### **Suggestions**

#### **1. General suggestion**

1.1 There should be a promotion and campaign of healthy food consumption of the lower secondary school students to gain knowledge and understanding about food consumption.

1.2 There should a promotion of knowledge on food values and food safety to create increase awareness in the students.

## 2. Suggestions for further study

1.1 Qualitative research of problems and causes of food consumption behaviors of Junior High School students should be conducted in order to gain in-depth and relevant information for clear comparisons.

1.2 There should be a study of the issue of consumption or other risk factors such as the consumption of beverages and hygiene that affect health.

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