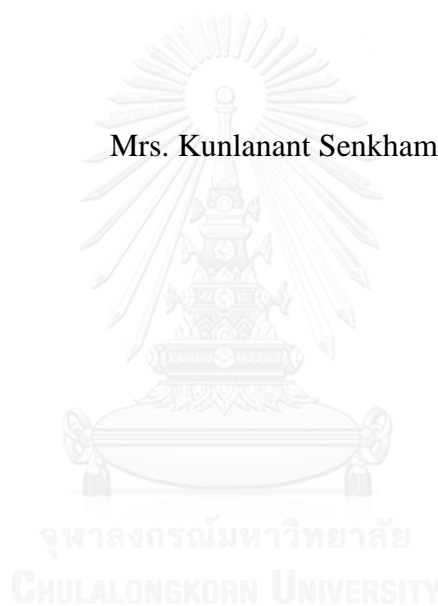


KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS THE CAMPAIGN
“EAT HOT FOOD, USE SERVING SPOON, AND ALWAYS WASH
YOUR HANDS” AMONG FOOD CONSUMERS IN CHULALONGKORN
UNIVERSITY’S CANTEENS BANGKOK THAILAND

Mrs. Kunlanant Senkham



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
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A Thesis Submitted in Partial Fulfillment of the Requirements
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ความรู้ เจตคติ และการปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ” สำหรับผู้บริโภคอาหาร
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Thesis Title	KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS THE CAMPAIGN“EAT HOT FOOD, USE SERVING SPOON, AND ALWAYS WASH YOUR HANDS” AMONG FOOD CONSUMERS IN CHULALONGKORN UNIVERSITY’S CANTEENS BANGKOK THAILAND
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กรุงเทพมหานคร ประเทศไทย (KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS THE CAMPAIGN “EAT HOT FOOD, USE SERVING SPOON, AND ALWAYS WASH YOUR HANDS” AMONG FOOD CONSUMERS IN CHULALONGKORN UNIVERSITY’S CANTEENS BANGKOK THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร. ประเทือง หงสรา นากร, 68 หน้า.

วัตถุประสงค์ของการศึกษานี้เพื่อประเมินความรู้ เจตคติ และการปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ” สำหรับผู้บริโภคอาหารในโรงอาหารของจุฬาลงกรณ์มหาวิทยาลัย กรุงเทพมหานคร ประเทศไทย การศึกษานี้เป็นการสำรวจแบบภาคตัดขวาง ประชากรที่สำรวจมีจำนวนทั้งสิ้น 430 คน อายุตั้งแต่ 18 ปีขึ้นไป โดยใช้แบบสอบถามในการเก็บข้อมูล และวิเคราะห์ความสัมพันธ์ทางสถิติด้วยไค-สแควร์ (Chi-square Test) และการทดสอบของฟิชเชอร์ (Fisher’s Exact Test) ผลการศึกษาพบว่าผู้บริโภคส่วนใหญ่ 79.8% มีความรู้ในระดับสูง, 58.4% มีเจตคติในระดับปานกลาง และ 71.2% มีการปฏิบัติในระดับปานกลาง นอกจากนี้ยังพบว่าความรู้มีความสัมพันธ์กับอาชีพ ($p=0.015$), รายได้ต่อเดือน ($p=0.009$), และการที่ผู้บริโภคเคยได้ยินเกี่ยวกับการรณรงค์นี้ ($p=0.012$) เจตคติมีความสัมพันธ์กับอายุ ($p=0.009$), การศึกษา ($p<0.001$), อาชีพ ($p<0.001$), รายได้ต่อเดือน ($p<0.001$), ค่าใช้จ่ายต่อเดือน ($p<0.001$), และการที่ผู้บริโภคเคยได้ยินเกี่ยวกับการรณรงค์นี้ ($p=0.004$) ส่วนการปฏิบัติมีความสัมพันธ์กับอายุ ($p<0.001$), การศึกษา ($p=0.017$), อาชีพ ($p<0.001$), รายได้ต่อเดือน ($p<0.001$), และค่าใช้จ่ายต่อเดือน ($p=0.001$) ในขณะที่ความรู้มีความสัมพันธ์กับเจตคติ ($p<0.001$) เจตคติมีความสัมพันธ์กับการปฏิบัติ ($p<0.001$) แต่ไม่มีความสัมพันธ์ระหว่างความรู้กับการปฏิบัติ ($p=0.488$) ของผู้บริโภคเกี่ยวกับการรณรงค์เรื่องนี้ โดยสรุป การศึกษานี้ควรจะเน้นโปรแกรมสุขศึกษาเกี่ยวกับโรคติดต่อทางอาหารและน้ำเพื่อเพิ่มพูนความรู้ของผู้บริโภค นอกจากนี้ควรจัดให้มีกิจกรรมส่งเสริมสุขภาพ โดยเฉพาะอย่างยิ่งการใช้ช้อนกลางที่ถูกต้องและการล้างมือให้ทั่วถึงเพื่อสร้างเจตคติและการปฏิบัติที่ดีของผู้บริโภคในจุฬาลงกรณ์มหาวิทยาลัย

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KUNLANANT SENKHAM: KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS THE CAMPAIGN“EAT HOT FOOD, USE SERVING SPOON, AND ALWAYS WASH YOUR HANDS” AMONG FOOD CONSUMERS IN CHULALONGKORN UNIVERSITY’S CANTEENS BANGKOK THAILAND. ADVISOR: ASSOC. PROF. PRATHURNG HONGSRANAGON, Ph.D., 68 pp.

The aim of this research was to assess the knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens, Bangkok, Thailand. This study was a cross-sectional survey. Four hundred and thirty subjects with at least 18 years old were recruited in this study and a structured questionnaire was use to gathers the data. Chi-square and Fisher’s Exact Test were used to analyze the association between independent and dependent variables. The results indicated that 79.8% of respondents had “high level of knowledge”, 58.4% had “neutral attitude”, and 71.2% had “fair practice”. In addition, the knowledge was associated significantly with occupation ($p=0.015$), income per month ($p=0.009$), and ever hearing about the campaign ($p=0.012$). The attitude was associated significantly with age ($p=0.009$), education ($p<0.001$), occupation ($p<0.001$), income per month ($p<0.001$), expenditure per month ($p<0.001$), and ever hearing about the campaign ($p=0.004$). The practice was associated significantly with age ($p<0.001$), education ($p=0.017$), occupation ($p<0.001$), income per month ($p<0.001$), and expenditure per month ($p=0.001$). Moreover, there was significant association between knowledge and attitude ($p<0.001$), and attitude and practice ($p<0.001$), while there was no significant association between knowledge and practice ($p=0.488$) of respondents about the campaign. In conclusion, this study should be emphasized on health education program concerning about food- and water- born communicable diseases to improve consumers’ knowledge. Furthermore, health promotion activities especially using serving spoon correctly and washing hands thoroughly should be arranged to create good attitude and practice among consumers at Chulalongkorn University.

Field of Study: Public Health

Student's Signature

Academic Year: 2014

Advisor's Signature

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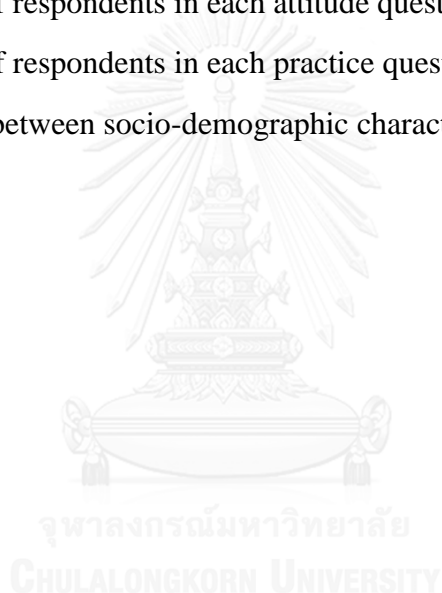


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LIST OF ABBREVIATION

CU	Chulalongkorn University
KAP	Knowledge, Attitude, and Practice
CHP	CU Happiness Program
OFOC	One Functional-unit One Community



CHAPTER I

INTRODUCTION

1.1 Background and rationale

The situation of food- and water-borne communicable diseases in 2013, showed that out of 1,259,408 patients, there were 1,122, 991 patients with diarrhea with 12 death cases, and 130,653 patients with food poisoning with 1 death, and the rest were cases of dysentery 2,822 patients, typhoid 2,562 patients, hepatitis 372 patients, and cholera 8 patients, respectively. From 1 January to 24 February, out of 206,528 patients, most had diarrhea (186,298 patients) with 3 cases of death, followed by 19,549 patients with food poisoning. These communicable diseases are mainly caused by eating food or drinking water that are contaminated with pathogens, such as, half-cooked food, food swarmed by flies, or overnight stored food, as well as having poor personal hygiene, for instance, not washing hands before eating and after using the toilet, and using spoons or glasses together with infected patients, or those who are asymptomatic (The Information and Public Relations Office 2014, access on September 27, 2014).

According to The Kingdom of Thailand Nutrition Survey in 2003, it found that (1) some household members (30.5 percent) ate half-cooked food, and all members ate half-cooked food (33.0 percent); (2) families used serving spoon correctly (43.4 percent) and washed hands with water and soap (10.7 percent) (Division of Nutrition 2003, p.71-73). While the results from restaurants survey in 2005 found that the restaurants did not provide serving spoons to customers (31.5 percent); and provided serving spoons or placed it on the table for customers' self-service (68.5 percent). The data indicated that restaurants and consumers did not pay attention to the use of serving spoon due to lack of knowledge and not being accustomed to using it. In addition, many people were afraid of being perceived as a spoon-scooping person even when being with friends, thus a lack of camaraderie in the group. No use of serving spoon can cause various kinds of diseases transmitted to them through saliva with a risk to get diphtheria, tuberculosis, polio, mumps, hepatitis, influenza, and other diseases caused by viruses found in the saliva. Moreover, hepatitis A virus is also transmitted through food and water. As a result, to prevent the spread of the germs that may be contaminated with people's saliva when they

eat together, people should use serving spoon to scoop the food to their own plate (Folk Doctor Foundation 2006, access on September 28, 2014).

The Department of Health, under the Ministry of Public Health, Thailand, is aware of such problem. Therefore, it has been campaigning on "Eat hot food, use serving spoon, and always wash your hands" to prevent diseases caused by unclean water and food, especially the three diseases of acute diarrhea, food poisoning, and cholera. Sometimes, the campaign may be concentrated during the seasons, or during some festivals. For example, in 2011, the Department of Health launched the "Clean hands to prevent influenza during rainy season" (after the outbreak of Influenza A 2009 (H1N1)) that motivated people in Bangkok to be aware of protecting their health more (ASTV Manager Online 2011, access on September 9, 2014). Meanwhile, there was also a campaign for good health promotion as "Eat hot food, use serving spoon, and always wash your hands" - a shield to prevent diseases for Thai people during summer of April 2014". Since people like to travel to various places during long holiday seasons, they should take care of their health by complying to the campaign "Eat hot food, using serving spoon, and always wash your hands". It is also suggested that in case there is some food that is left over, it must be kept in the refrigerator and warmed up with the heat thoroughly before eating them (Nawakit Ban Muang Company Limited 2014, access on September 9, 2014)

Parallel with this national campaign for health prevention, Chulalongkorn University (CU) has recognized and focused on such issues as well. CU is the top Thai university by 2014 QS World University Rankings. The CU's vision is to be the "Pillar of the Kingdom," together with being a warm home for students equipped with good characters and good competency as preferred graduates. CU had initiated the "CU Happiness Program" (CHP) with its first phase emphasis on the One Functional-unit One Community (OFOC) from the year 2008 up to now. The objective of the program establishing "Health Promotion University" by integrating the implementation of the plan through various mechanisms of the relevant systems (Team of the CU Happiness Program, 2009, p.1). Later in 2009, there was an advertisement about establishing Chula's community to be free from Influenza 2009 with the suggestion that people take care of themselves by wearing a mask together with frequent hand-washing (Chulalongkorn University 2009, access on September 29, 2014). Moreover, CU radio station serves as a channel to disseminate this campaign to university students and the

faculty members as well as university staff. For instance, the news clip in March 2014 regarding the Ministry of Public Health's warning to the public to beware of diseases in summer season through the campaign "Eat hot food, use serving spoon, and always wash one's hands" (Chulalongkorn University Broadcasting Station 2014, access on September 29, 2014). In April 2014, there was a piece of broadcast news about the epidemic of 2012 viral Corona that caused disease in Thailand though on a small scale. However, this problem can be protected by one's eating hot food, use serving spoon, and always wash one's hands (Chulalongkorn University Broadcasting Station 2014, access on September 29, 2014).

For CU to be the "Health Promotion University" focusing on an awareness of food safety and eating behavior among food consumers on CU campus to protect the problems mentioned above, the researcher is interested in accessing the knowledge, attitude, and practice towards the campaign "eat hot food, use serving spoon, and always wash your hands" among food consumers in CU's canteens.

1.2 Research questions

- 1) What is the level of knowledge, attitude, and practice (KAP) towards the campaign "Eat hot food, use serving spoon, and always wash your hands" among food consumers in CU's canteens?
- 2) Do the socio-demographic characteristics associate with knowledge, attitude, and practice of this campaign?
- 3) Is there any association between knowledge and attitude, knowledge and practice, and attitude and practice towards this campaign?

1.3 Hypothesis

- 1) The socio-demographic characteristics associate with knowledge, attitude, and practice towards the campaign "Eat hot food, use serving spoon, and always wash your hands."
- 2) There are associations between knowledge and attitude, knowledge and practice, and attitude and practice towards the campaign "Eat hot food, use serving spoon, and always wash your hands."

1.4 Objectives

General Objective

To assess the level of knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in CU’s canteens.

Specific Objective

- 1) To determine the association between socio-demographic characteristics and knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands.”
- 2) To determine the association between knowledge and attitude, knowledge and practice, and attitude and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands.”

1.5 Conceptual framework

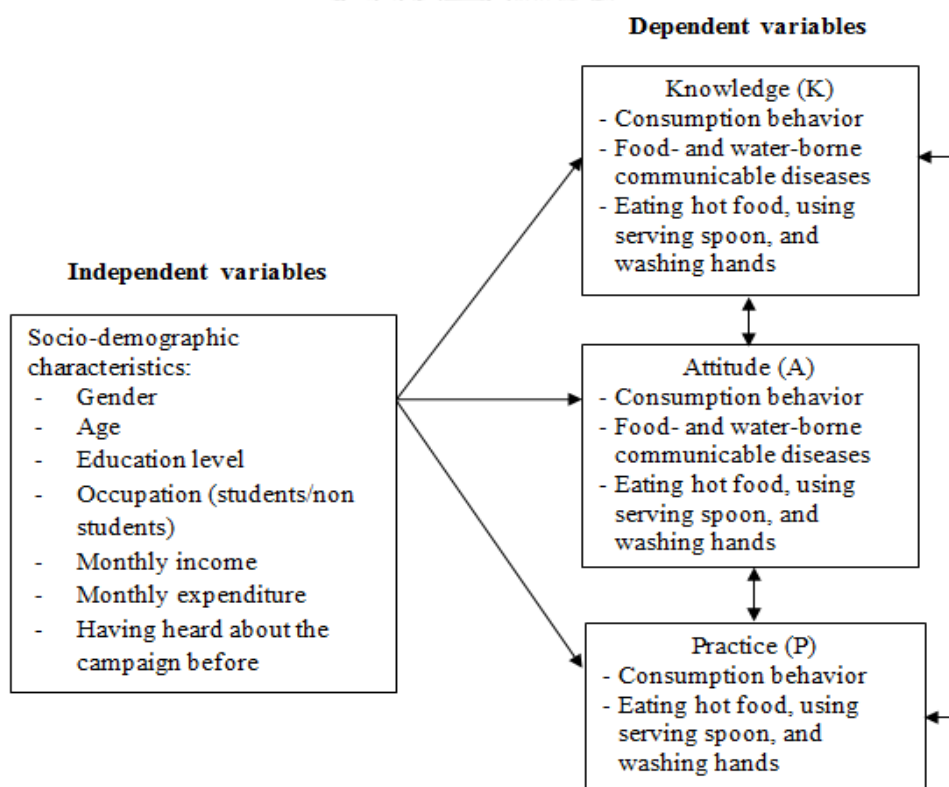


Figure 1 Conceptual framework

1.6 Operational definition

- 1) **The campaign** means the campaign on “Eat hot food, use serving spoon, and always wash your hands” defined by the Department of Health, the Ministry of Public Health, Thailand.
- 2) **Knowledge** refers to being aware of and understanding about the campaign on “Eat hot food, use serving spoon, and always wash your hands” among food consumers in CU’s canteens, either from the study, observation, or self-experiences (direct and indirect).
- 3) **Attitude** refers to the way of thinking towards the campaign among food consumers in CU’s canteens (positive and negative).
- 4) **Practice** refers to the frequency of actions according to the campaign among food consumers in CU’s canteens.
- 5) **CU’s canteens** refer to the canteens on CU’s campus.
- 6) **Food consumers** refer to people who consume in CU’s canteens, including students, faculty members, staff, and outsiders.
- 7) **Gender** refers to self-identification of respondents as male or female
- 8) **Age** describes full- year age of respondents.
- 9) **Education level** means the highest level of education attained by respondents.
- 10) **Occupation** refers to respondents’ job.
- 11) **Monthly income** refers to average monthly income of respondents.
- 12) **Monthly expenditure** refers to average monthly expenditure of respondents.

CHAPTER II

REVIEW OF LITERATURE

The thesis topic is “Knowledge, Attitude, and Practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens, Bangkok, Thailand”. In order to fulfill the topic, the researcher has reviewed the following concepts:

2.1 The CU happiness and One Functional-unit One Community (OFOC)

Chulalongkorn University is a leading university in Thailand with the vision to become the "Pillar of the Kingdom." “Happiness” is one of the University’s 2012-2016 strategic plans with the fifth outcome of being a warm place/home for good and smart students who are responsible and accountable to the society (Office of the University, C.U., 2012, p.18). This “happiness” is expected to be realized by having the healthy body and healthy mind. Consequently, taking care of health for students, faculty staff, general staff, and people within CU’s neighborhood becomes important. Meanwhile, for CU’s goal to be the “Health Promotion University” role model, it is also necessary that health information be disseminated to people on and off campus. This has led to an establishment of the “CU Happiness Program” (CHP) Phase 1 with a continuation to the “One Functional-unit One Community” (OFOC) running from 2008 up to the present time. The program’s specific objectives are as follows: (Team of The CU happiness program 2009, p.1-2);

- 1) To make clear the CU’s role in promoting health public policy by developing health knowledge and innovation at local, national and international levels;
- 2) To provide supportive environment for health and safety;
- 3) To strengthen health issues for on and off campus communities;
- 4) To create health promotion awareness and health promotion potentiality among the students;
- 5) To add-in health promotion-oriented content in the study courses and training;
- 6) To increase the ability for self-care for chronic diseases among CU’s personnel and people in nearby communities.

Consequently, the food safety project for CU's canteens comes under the umbrella of "CU Happiness Program" (CHP). The goal is to build-up self-care capacity among CU's food consumers by ensuring that the consumers eat clean, safe and high nutritious food. To achieve this goal, it is necessary that supportive environment be in place in order to integrate teaching classes with learning experiences. The project consists of 1) surveying and monitoring food contaminants; and 2) developing the capacity of food vendors through the competition for a canteen role model (Tipayanate Ariyapitipun and Jongjit Angkatavanich et al. 2009, p.11).

Eleven activities were elaborated to support the project:

Project 1: surveying and monitoring food contaminants

Activity 1: survey the number of food shops/kiosks and food categories sold in the canteens;

Activity 2: investigate the food vendors' use of hot pot for spoon-fork-chopstick scalding;

Activity 3: monitor for the chemicals that are prohibited in food;

Activity 4: analyze *Coliforms*, *Escherichia coli* and food poisoning bacteria in selected food samples and beverages sold in the canteens;

Activity 5: test aflatoxin in beans and cayenne peppers (as seasoning);

Project 2 development of canteen role model through competition among food shops

Activity 1: questionnaire for needs and satisfaction survey among the consumers to improve food sanitation and food safety in six CU's canteens, including the Office of the University canteen; Chula Chakrabongse Building canteen; Chula Phat 9 canteen; Pinitprachanart Building canteen; Mahittalathibet Building canteen; and the Faculty of Arts temporary canteen;

Activity 2: questionnaire for needs and satisfaction survey among food vendors to improve food sanitation and food safety in the above mentioned six CU's canteens;

Activity 3: health check among food vendors;

Activity 4: workshop on nutrition, safety, and food services for food vendors;

Activity 5: primary data collection through survey of the canteens with an accreditation for them based on the standard criteria of CU's

canteens, equipped with consultancy/suggestions; improvement monitoring; and problem solving, plus contamination prevention for the food shops;

Activity 6: accreditation for the canteens with a certificate on food sanitation from the Environment and Public Park Section, Pathum Wan District Office, Bangkok Metropolitan Administration.

The One Functional-unit One Community (OFOC) project (see in the Appendix) was subsequently established (Phase 1 to Phase 4), with an aim of CU's corporate social responsibility (CSR) on health promotion activities for community strengthening. The aim complies with CU's long-term mission, expertise and attention. OFOC projects are in line with CU Happiness Program (CHP) (Office of Strategy Management and Budgeting Chulalongkorn University 2014, access on September 28, 2014).

As University's own initiatives, CU Happiness Program (CHP) should be implemented continuously to meet and keep up with the Quality Assurance (QA) system for higher educational institutes. Seven criteria are set as the guidelines for QA evaluation: Plan, Do, Check, Action, National recognition, Asian recognition, and International recognition. Therefore, to comply with CU's strategic plan 2012-2016, namely, being the role model for "Health Promotion University," the researcher would like to study KAP towards the campaign "eat hot food, use serving spoon, and always wash your hands" among food consumers in CU's canteens.

2.2 The campaign “Eat hot food, use serving spoon, and always wash your hands” by the Department of Health, Ministry of Public Health, Thailand

Having good consumption behavior can help to prevent food- and water-borne communicable diseases such as diarrhea, influenza, diphtheria, mumps, tuberculosis, polio, and hepatitis viruses A because these diseases can be transmitted through mucous and secretion of the patients or carriers. Therefore, consumers should know about good consumption behavior and how to prevent themselves of being the diseases' carriers by “Eat hot food, use serving spoon, and always wash your hands” the campaign of the Department of Health. (Bureau of Food and Water Sanitation, Department of Health et al. 2011, p.2).

2.2.1 Eat hot food

In term of “eat hot food,” this phrase can be explained as follow:

- 1) Eat promptly cooked food - eat food immediately after thoroughly cooked by heating;
- 2) Cooked food thoroughly - food made of meat should be cooked with high temperature of at least 70⁰ Celcius 3-5 minutes to make sure that all parts are well done. Don't eat undercooked food;
- 3) Store cooked food properly - cooked food should be covered to prevent contamination from dust, pest & pets. Left-over food stored longer than 4 hours should be reheated thoroughly before eating.

2.2.2 Serving spoon

Serving spoon can help to prevent diseases transmitted through saliva such as influenza, diphtheria, mumps, tuberculosis, polio, and hepatitis virus A between people. The serving spoon can also help to prevent contamination of saliva in food that cause food spoiling. In addition, it makes good consumption habits and creates good customs when eating in group.

2.2.3 Hand washing

Hands are used for many activities such as touching things and environment, e.g., door knobs, glasses, napkin, telephone, and handrail, that can contaminated with saliva, nasal secretion of patients or carriers. With contaminated hands, germs can enter your body via nose, eyes, mouth, and contaminated food.

Hence, we should always keep our hands clean, not being germs' carrier by washing hands with soap and water upon various occasions, for instance:

- Before eating meals;
- Before and after preparing & cooking food;
- After using toilet;
- After touching garbage and pets/animals;
- After coughing, sneezing, and blowing nose.

Below is the picture demonstrating the areas mostly unclean when washing hands:



Red: Most frequently missed areas

Orange: Less frequently missed areas

Figure 2 Areas most frequently missed during hand washing

As well, the seven-step practice for effective hand washing is herewith indicated:



Figure 3 Application of seven-step practice for effective hand washing
(Repeat 5 times for each steps)

Available from the pamphlet “Eat hot food, use serving spoon, and always wash your hands” by the Department of Health, the Ministry of Public Health, 2011, P.2.

From figure 3, to wash one's hands effectively, these seven steps should be applied (repeat 5 times for each step). Starting by wetting your hands with water and apply enough soap to cover all hand surfaces, then:

- 1) Rub palm to palm;
- 2) Right palm over the back of left palm, vice versa;
- 3) Rub palm to palm with fingers interlaced;
- 4) Backs of fingers to opposite palm with fingers interlocked;
- 5) Rub right thumb rotationally with left palm, vice versa;
- 6) Rotational rubbing of right fingertips to palm, vice versa;
- 7) Rational rubbing of right wrist by left palm, vice versa.

Wash hands with water thoroughly and dry with a single use towel.

2.3 Food- and Water-Borne Communicable Diseases

Food- and water-borne communicable diseases are common diseases secondary to influenza caused mainly by bacteria. These bacteria germinate well in hot weather and are common diseases in the tropical countries. Pathogen enters the body by eating food or drinking water contaminated with germs, such as, diarrhea, food poisoning, dysentery, typhoid fever or typhoid, and cholera (Epidemiology Unit of Communicable Disease and Srinakarin Hospital 2011, access on September 29, 2014). The researcher would like to focus only on certain major diseases that are described here below:

1) Diarrhea

Diarrhea is a common symptom of gastrointestinal infections caused by wide range of pathogens, including bacteria, viruses and protozoa. Most of diarrheal germs are spread from the stool of one person to the mouth of another, this is called faecal-oral transmission. These germs are usually spread through contaminated food and water in many ways, such as people and animals defecate in or near sources of water that people drink; contaminated water is used to grow crops; food vendors do not wash their hands before cooking, and people with contaminated hands touch things, such as doorknobs, tools, or cooking utensils (Unicef and World Health Organization 2009, access on September 29, 2014). Having diarrhea means passing watery/loose stools three times or more a day. Acute diarrhea is a common problem that usually lasts 1 or 2 days and goes away on its own. If it lasts more than 2-day time, it may be a sign of more serious problem. In case it lasts up to 4-week time, it may be a symptom of a chronic diarrhea. Chronic diarrhea symptoms may be continual or intermittent (The National Institute of

Diabetes and Digestive and Kidney Diseases and U.S. Department of Health and Human Services 2013, access on January 2, 2015). Sometime watery diarrhea with blood – one time a day, can cause patients to vomit. The symptoms can range from minor to severe symptoms of dehydration and shortage of minerals that can cause the shocking, unconsciousness and even death (The office of Disease Prevention and Control 1 Bangkok, access on September 24, 2014).

2) Food poisoning

Food poisoning or food-borne disease is a general term used to describe any disease or illness caused by consuming contaminated food or beverages (Coconino County Department of Health Services and Environmental Health 2002, access on September 24, 2014). It is a major cause of mortality and morbidity across the world. With an increase of internationalized food production and wide range distribution, it implies that pathogens associated with food are borderless (Food Standard Australia Newzealand 2013, access on October 2, 2014).

There are more than 250 known food-borne diseases. The majority of these diseases are infectious caused by bacteria, viruses, or parasites. Other food-borne diseases are essentially poisonings that are caused by toxins, chemicals or other harmful substances contaminating the food (The National Institute of Allergy and Infectious Diseases 2014, access on October 2, 2014). They are usually found in half-cooked food from contaminated meat, such as beef, chicken, pork, beef, chicken eggs, duck eggs, canned food, seafood, poisonous mushrooms and unsterilized milk. They may also be found in foods made too long in advance that are not chilled, and not heated long enough before eating. The main symptoms are fever and abdominal pain as pathogens causes inflammation of stomach and intestines. Headache, body aches, nausea, vomiting, loss of appetite, and diarrhea are also the symptoms. In case of frequent diarrhea causing a lack of water and minerals, some people may have severe symptoms because of infection and inflammation of the body organs, such as bones and joints, gall bladder, heart muscles, lung, kidney, as well as cortex. When the pathogens enter the bloodstream, blood poisoning may result which may cause deaths, especially among infants, young children and the elderly (The office of Disease Prevention and Control 1 Bangkok, access on September 24, 2014).

3) Dysentery

Dysentery is caused by bacteria or amoeba through the intake of raw vegetables or drinking water contaminated with pathogens. The main symptoms are defecation, feces with mucus or blood resulting from an inflammation when they go through the intestinal wall. Small intestine ulcer with fever, nausea, vomiting, cramps, dystonia, abdominal pain can be caused while some people may have them as a chronic disease (The Office of Disease Prevention and Control 1 Bangkok, access on September 24, 2014).

4) Typhoid

Typhoid is caused by bacteria and is communicable through the intake of contaminated food and water with feces and/or urine of patients. The main symptoms are high fever of 40° Celcius for long periods of time, headaches, body aches, fatigue, loss of appetite, abdominal distension, abdominal fullness, and constipation or diarrhea in some patients. Patients with this chronic disease have an infection in their own feces and urine that cause them to be disease's carrier. If the patients cook uncleanly, a typhoid may infect and spread to others (The Office of Disease Prevention and Control 1 Bangkok, access on September 24, 2014).

5) Hepatitis A

A general meaning of Hepatitis is liver inflammation that can be caused by different types of viruses such as hepatitis A, B, C, D and E. Hepatitis A is caused by infection with the hepatitis A virus (HAV) whereby the level of its severity range from a mild illness lasting only a few weeks to a severe illness lasting several months. The infection can be spreaded when an infected person does not wash his or her hands properly after going to toilet and then touches food or things. In case a caregiver does not wash his or her hands appropriately after changing diapers or cleaning up the stool of an infected person, or when someone engages in oral-anal sexual activities with an infected person, they can get hepatitis A. Hepatitis A can also be spreaded through contaminated food or water if personal hygiene or sanitary conditions are poor.

The symptoms regularly show up from 2 to 6 weeks after becoming infected. These include fatigue, fever, nausea, vomiting, appetite loss, grey-colored stools, dark urine, abdominal pain, joint pain, and jaundice. Adults may be at risk more than children. The symptoms usually last less than 2 months, although some people can be ill for as long as 6 months (Centers for Disease Control and Prevention and U.S.Department of Health and Human Services 2012, access on October 2, 2014).

6) Cholera

Cholera is caused by bacteria or amoeba and can be communicable by eating foods or drinking water contaminated with pathogens. The main symptom is watery diarrhea where most have no symptoms until watery diarrhea occurs like natural "rice water" with fishy odor. Vomiting may also be associated with diarrhea, and a sudden lack of water and minerals can cause thirst, dry mouth, restlessness, fatigue, hollowed eyes, wrinkled skin, little amount of urine or no urine, deep breathing disorder, and fast pulse. When these symptoms rapidly occur, the patient may be in a shock state and unconsciousness due to severe dehydration. Severe symptoms may cause death in a short time period in case of no prompt treatment.

Although food- and water-borne communicable diseases mentioned above are different causes of disease, there are similar ways for them to enter the body by eating or drinking food and water contaminated with pathogens such as half-cooked dishes like minced meat spicy salad, meat in spicy condiment, food swarming with flies, or food made in advance without keeping the food cold and not heat the food long enough before eating.

The patients with these diseases can spread an infection through feces. For food vendors, they (as well as waiters/waitresses) are more likely to spread the diseases to other persons as well (The Office of Disease Prevention and Control 1 Bangkok, access on September 24, 2014).

2.4 Concept of knowledge, attitude, and practice (KAP)

2.4.1 KAP study

A KAP study refers to the measurement of one person's knowledge, attitude, and practice. A large number of researchers and institutions use KAP study in various fields. For instance, Food and Agriculture Organization of the United Nations (FAO) has been using KAP studies to explore in term of nutrition, diet, food hygiene and other health issues (Food and Agriculture Organization of the United Nations 2014, access on October 2, 2014).

2.4.2 KAP survey

A **KAP survey** is a representative study of a specific population to collect information on what is known, believed, and acted upon in relation to a particular topic (World Health Organization 2008, p.6). In order to properly carry out this type of survey,

it is necessary to define each term as follow: (Gumucio January 2011, access on October 2, 2014):

Knowledge is a set of understandings where knowledge of any discipline/science includes the capacity of people to imagine and perceive. Health behavior knowledge, though helpful, does not automatically and directly turn into any behaviors. The knowledge survey helps to locate areas where information and education efforts remain to be carried out and/or to continue;

Attitude is a way of believing or a positioning. It indicates a tendency for a person to respond to situations given. Attitude helps to explain that among possible practices for a subject submitted to a stimulus, the subject will adopt one practice and not another;

Practices are concrete and observable actions/behaviors of an individual in response to a stimulus. For health-related practices, one may collect information on a consumption of tobacco or alcohol, screening practice, vaccination practice, sporting activities, sexual activities, and so on.

2.4.3 KAP steps

KAP surveys normally have 6 steps as follows: (World Health Organization 2008, p.5):

Step 1: Define the survey's objective – the objective should contain the access on existing information; determine the purpose of the survey; indicate the main area of enquiry; as well as identify the survey population and sampling plan;

Step 2: Develop the survey's protocol – this means to outline the elements to be included in the survey protocol. It is also the suggestions given to identify the key research questions. Determining whether the survey needs ethics review is critical to this step, as well as creating a work plan and budgeting;

Step 3: Design the survey questionnaire - this is an important step for developing, pre-testing and finalizing the questionnaire, for further data analysis;

Step 4: Implement the KAP survey - that includes due considerations for choosing survey dates, recruiting and training survey supervisors and interviewers, and managing survey implementation effectively;

Step 5: Analyze the data - this consists of entering and checking the quality of the survey data, and implementing the data analysis plan according to Step 3; and

Step 6: Use the data – this highlights an idea on how to translate the survey findings into actions. Necessary elements are the study report and dissemination of the survey findings.

2.5 Related researches

There have been a variety of studies on KAP in regards to food hygiene and eating behavior that are related to this study. For example, the study results by Chukuezi (2010, p.50-57) stated that the street food vendors in Owerri, Nigeria, need to have the knowledge about food safety because they have no hygienic conditions for preparing food, such as the food vendors under the study did not care to use aprons; they use their bare hands to handle food, they did not cover their hair, and they also caught money while serving food. Sometimes they also wore jewelry while serving food and blew air into polythene bag before use. These vendors sold food in the open kiosks, kept food in the wheelbarrows, and had poor storage facilities to store left-over food for next day. The vendors also washed the utensils with dirty water which was used repeatedly several times a day.

Siow and Norrakiah (Siow and Norrakiah 2011, p.403-410) assessed the knowledge, attitudes and practices (KAP) on food safety among food vendors at residential colleges and canteens in the main campus of Universiti Kebangsaan, Malaysia, by using the survey questionnaire. The knowledge of respondents was moderate with mean point of 57.8%, while poor scores on food storage and preparation temperatures, however good on personal hygiene and definition of food-borne diseases. Respondents had positive attitudes on food safety and hygiene (76.9%) and food-borne disease prevention and control (70.8%). Most respondents had an average practice scores.

Rahman, et al. (Rahman, M.M., et al. 2012, p.95-103) studied the knowledge, attitude and practice of food safety among food vendors in Kuching City, Sarawak. They wanted to find the associated factors by interviewing face-to-face and also survey questionnaire. They found that the key factors of food safety knowledge were age and ethnic of vendors, and the factors for attitude were food safety knowledge and training. While knowledge, attitude, training and age of vendors influenced the practice on food safety, however, the length of time for selling food had a relationship in a reverse direction with food safety practice.

Burton, et al. (Burton, M., et al. 2011, p.97-104) conducted a study regarding the effect of hand washing with water or soap on bacterial contamination of hands. The study

dealt with 20 volunteers with contaminated hands intentionally by touching door handles and railings in public spaces. The result indicated that hands washing with water alone could reduce the presence of bacteria for 23 percent, while hands washing with plain soap and water could reduce the presence of bacteria for 8 percent (comparison with both arms washing). The effect did not imply the species of bacteria. Hands washing with non-antibacterial soap and water were more effective for the removal of bacteria on the potential fecal originated from hands than washing with water alone. The finding should be useful for the prevention of diarrheal diseases transmission.

In Thailand, from baseline data of Thai people and dietary habits of 4,083 household in the Survey of Food and Nutrition of Thailand 2003 (Division of Nutrition 2003, p.71-73), most household members did not eat half-cooked food (36.5 percent), some ate half-cooked food (30.5 percent), and all ate half-cooked food (33.0 percent). Concerning the spoon use, there were 68.6 percent of household members who used spoon for eating, 26.1 percent washed their hands by water before either putting food into the mouth by the fingers or molding lump of sticky rice; 3.6 percent washed hands sometimes or did not wash hands before putting food into the mouth; and only a few washed their hands with water and soap (1.7 percent). Most household members used spoon to eat especially in urban areas more than in rural areas. An exception was for the south of Thailand where there were higher household members who used spoon to eat in rural areas more than in urban areas. Out of all household members, 43.3 percent used serving spoon correctly (by using spoon to transfer food from common dish to one's own plate or bowl). 42.7 percent of these household members did not used serving spoon and 13.8 percent used serving spoon improperly. Regarding hand washing, most household members washed their hands with water alone (66.7 percent); wash hands with water and soap (10.7 percent), wash hands sometimes (20.1 percent), and never wash hands (2.4 percent).

Sudarat, et al. (Sudarat Kangthong, et al. 2007, access on October 2, 2014) studied health care behavior among officers in Sakon Nakhon Rajabhat University. The data was collected from 326 respondents out of 577 populations. The result indicated that the University officers had 4 dimensions of health care behavior level including food consumption behavior, exercise behavior, emotion and stress management behavior, and daily life health care behavior. Regarding food consumption behavior, the officers always

ate cooked food (86.90 percent), and frequently wash their hands before eating (77.1 percent).

Hathaikarn and Umporn (Hathaikarn Sotedee and Umporn Chimplee 2007, access on October 2, 2014) conducted a study on food consumption behavior among students in Rajaphat Nakhon pathom University and the associated factors. There were 391 respondents from a total of 9,544 populations. The result indicated that students used a spoon to eat regularly (25.8 percent), often (24.1 percent), infrequently (44.5 percent), and never (5.6 percent). For hand washing, they washed their hands before eating regularly (41.2 percent), often (33.5 percent), infrequent (23.0 percent), and never (2.3 percent).

Suwapa and Chavisa (Suwapa Promme and Chavisa Raotamyinyong 2009, access on October 2, 2014) studied the knowledge, attitude, food consumption behaviors and health promotion practice among the policemen in the Training Center, Provincial Police Region 8. The result demonstrated that the policemen were different in term of age, education level, job description, monthly income, family characteristics, and knowledge on food consumption and health promotion. However, they were not different in their attitude and eating behavior. An exception took place when the policemen had differences in the number of service years in such a way that they were not different in attitude but their eating behaviors were different.

Thidarat, et al. (Thidarat Cuprasitrut, et al.. 2011, p.27-34) investigated the situation of food safety among food stalls and food shops which sold food for merit-making in Ratchathewi District, Bangkok. Less than half of the total stalls passed the standard criteria (16.4 percent). Ready-to-eat foods had no cover and were not re-heated before the selling. Only 13.0 percent of the food vendors had a good level of knowledge, 18.5 percent and 15.2 percent had a good level of attitude and practice, respectively. As a result, food shops and food stalls were in a necessity to be monitored continually about food safety. It was suggested that food vendors should be appropriately trained on the basic principles of food safety, rules of personal hygiene, and approved practices in food selling.

CHAPTER III

METHODOLOGY

3.1 Research Design

Cross-sectional survey method was used to identify the knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens.

3.2 Study Area and Study Period

This study was conducted in 18 Chulalongkorn University’s canteens, Bangkok, Thailand from October 2014 to July 2015.

3.3 Study Population

Populations in this study were the food consumers in canteens on Chulalongkorn University campus, including students, faculty members, staff, and outsiders. Total number of population was 10,673 in this study. This number was equal to the number of seats in all canteens on campus.

3.4 Sample Size Calculation

Formula of TARO YAMANE $n = \frac{N}{1+N(e)^2}$
 (Taro Yamane 1967, access on February 15, 2015)

By n = The estimated sample size
 N = The population size
 e = The level of precision required,
 the value of 5% was selected

When N = 10,673
 e = 0.05

Therefore n = $\frac{10,673}{1+10,673(0.05)^2}$ = 385.55

An estimate of 10% of 386, or an extra of 40 respondents, is added up just in case some respondents did not respond, therefore, approximate 430 respondents were required for this study.

Location of CU's canteens, number of seats, and sample size in each canteen were indicated as follow:

Table 1 Location of CU's canteens, number of seats, and sample size in each canteen

No.	Location of CU's canteens	Number of seats*	Sample size**
1	Narch Phothiprasard Building (Faculty of Architecture)	720	29
2	Witthayakit Building	696	28
3	Near Maha Chakri Sirindhorn Building (Faculty of Arts) - downstairs 572 seats - mezzanine 208 seats	780	31
4	Faculty of Engineering - downstairs 290 seats - upstairs 200 seats - outside 140 seats	630	25
5	Faculty of Political Science	512	21
6	Chula Chakrabongse Building	946	38
7	Mahittalathibet Building - inside 580 seats - outside 632 seats	1,212	49
8	Pinitprachanart Building	1,028	41
9	Faculty of Education	336	14
10	Office of the University	288	11
11	Pud Chon building (Student Dormitory)	840	34
12	Sasa Patasala Building (Sasin Graduate Institute Business Administration)	273	11
13	Parking of Faculty of Medicine	322	13
14	Phai Sing To Building	336	14
15	Medical School and College Academic Building	298	12
16	H.M. Queen Sirikit Building 11 th floor	204	8

No.	Location of CU's canteens	Number of seats*	Sample size**
17	CP Food World Building	644	26
18	Chula Phat 9 Building	608	25
Total		10,673	430

* number of seats represent the number of food consumers

** sample size (V.Varalakshmi, N.Suseela et al. 2005)

$$= (\text{Number of seats} \times \text{Total sample size}) / (\text{Total seats})$$

$$= (\text{Number of seats} \times 430) / (10,673)$$

3.5 Sampling Method

The respondents were selected by convenience sampling when they presented in CU's canteens.

3.5.1 Inclusion Criteria

- Food consumers, male and female by gender, aged 18 and over who ate their meals in CU's canteens. The areas included inside the canteen building, outside, and/or nearby the canteens where they could take the dishes to eat.
- Food consumers who were willing to reply the survey questionnaire.
- Food consumers who were Thai literate.

3.5.2 Exclusion Criteria

- Food consumers in coffee shop zone that included the coffee shop at Faculty of Engineering, Faculty of Political Science, and CP Food World Building.
- Food consumers who were foreigners.
- Food consumers in vulnerable group (such as disabled people, pregnant women, etc.)

3.6 Measurement Tools

Structured questionnaire in Thai were used to collect the data (see in the Appendix). It consisted of four parts with the close-ended questions (some questions are adopted from the brochure of the campaign “Eat hot food, use serving spoon, and always wash your hands” by the Department of Health, the Ministry of Public Health, Thailand).

Part 1 Socio-demographic characteristics of respondents:

There were 8 questions in this part. The questions were about the gender, age, education level, occupation (students/non-students), monthly income, monthly expenditure, and whether they had ever heard about the campaign before they answer the questionnaire.

Part 2 Knowledge towards the campaign:

There were 13 questions in this part. The questions focused on knowledge about the details of the campaign “Eat hot food, use serving spoon, and always wash your hands” that included consumption behavior, food- and water-borne communicable diseases, and behavior about eating hot food, using serving spoon, and washing hands. The statements included both positive and negative views. The rating scales were measured as follow:

Positive statements		Negative statements	
Answer	Scores	Answer	Scores
Correct	1	Correct	0
Wrong	0	Wrong	1
Do not know	0	Do not know	0

The score ranges were between 0 and 13 which were converted to 100 scores and they were grouped into 3 levels as follow:

11-13 scores (81-100%)	=	High level of knowledge
8-10 scores (60-80%)	=	Moderate level of knowledge
0-7 scores (less than 60%)	=	Low level of knowledge

Part 3 Attitude towards the campaign:

There were 9 questions in this part using Likert scale. The statements included both positive and negative views. The rating scales were measured as follow:

Positive statements		Negative statements	
Choice	Scores	Choice	Scores
Strongly agree	4	Strongly agree	0
Agree	3	Agree	1
Neutral	2	Neutral	2
Disagree	1	Disagree	3
Strong disagree	0	Strong disagree	4

The scores varied from 0 to 36 and each question was summed up for total scores and then converted to 100 scores. The scores were grouped into 3 levels as follow:

Positive attitude	=	29-36	scores (81-100%)
Neutral attitude	=	21-28	scores (60-80%)
Negative attitude	=	0-20	scores (less than 60%)

Part 4 Practice towards the campaign:

There were 8 questions related to food consumers' actions/behaviors towards the campaign "Eat hot food, use serving spoon, and always wash your hands." The practice was assessed by using Likert's scale. The statements included both positive and negative way of actions. The rating scales were measured as follow:

Positive statements		Negative statements	
Choice	Scores	Choice	Scores
Usually	4	Usually	1
Sometime	3	Sometime	2
Rarely	2	Rarely	3
Never	1	Never	4

The scores varied from 8 to 32 and all questions were summed up for total scores and then converted to 100 scores. The scores were grouped into 3 levels as follow:

Good practice	=	26-32	scores (81-100%)
Fair practice	=	19-25	scores (60-80%)
Poor practice	=	8-18	scores (less than 60%)

3.7 Validity Test

To achieve the validity of the questionnaires, three content experts were performed.

3.8 Reliability test

The questionnaire were conducted on a pilot test for 40 respondents in Kasetsart University, Bangkok, Bangkok, where the structure of undergraduate and graduate students were similar to Chulalongkorn University's ones, tentatively during March 2015, which was after the researcher's thesis proposal examination but during the process of ethics request, in order to test the reliability of the survey questionnaire. The internal consistency of the rating scales were performed by Cronbach's alpha coefficient for an analysis of attitude and practice, while Kuder-Richardson test or KR-20 (a special case of Cronbach's Alpha in which the items are binary variables) for an analysis of knowledge in order to get at least more than 0.80. According pilot study with 40 questionnaires, Knowledge contained 13 items had Cronbach alpha = 0.806. Attitude contained 9 items had Cronbach alpha = 0.813 and Practice level contained 8 items had Cronbach alpha = 0.809.

3.9 Data Collection

The researcher arranged one training session for 5 research assistants in order to explain thoroughly on the objective of the study, the components of the questionnaire, principle of confidentiality and ethical consideration.

The researcher and research assistances approached potential participants through survey by questionnaire distribution. They were given a checklist of items that were to be completed by the respondent's reply and they were responsible for checking off each item completed after each response. In addition, each questionnaire was assigned a number that corresponded to each respective research assistant.

3.10 Data Analysis

After the data collection, data were coded and an analysis was performed by using SPSS statistical software, version 17, licensed for Chulalongkorn University.

The descriptive statistics were used - the frequency, percentage, mean and standard deviation, including minimum and maximum values - to explain the distribution of socio-demographic characteristics, knowledge, attitude, and practice of the respondents.

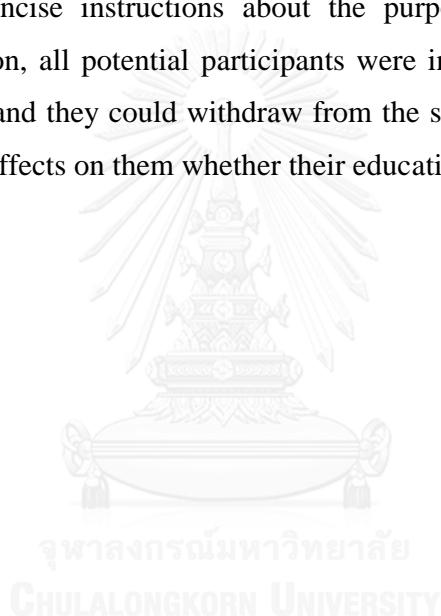
For analytical statistics, Chi-square and Fisher's Exact Test were used to explain the association between socio-demographic characteristics and KAP, and association between knowledge, attitude, and practice. The Chi-square test was employed for testing the association between two categorical variables and no more than 20% of the cells

should had expected frequencies <5 , while Fisher's Exact Test was used to solve the problem of small expected frequencies dealing with 2 X 2 table. The significant level in this study was set up at 0.05.

3.11 Ethical Consideration

The study was sought an approval from the Ethics Review Committee for Research involving Human Research Subjects, Health Sciences group, Chulalongkorn University before full-scale data collection to ensure that the study did not knowingly present any danger to participants.

Furthermore, before distribute the questionnaire, the research assistants instructed to give clear and concise instructions about the purpose of the study to research participants. In addition, all potential participants were informed that participation was completely voluntary and they could withdraw from the study at any time, which would not have any adverse effects on them whether their education or their work.



CHAPTER IV

RESEARCH RESULTS

This chapter provided the detailed description of the results obtained from the analysis of cross-sectional survey about knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens. The variables were described as simple percentages, means, and standard deviations as appropriateness depended on the nature of the variables. It started with the demographic data followed by the responses for each section of the questionnaire. The level of knowledge, attitude, and practice score were then presented followed by the results of Chi-square and Fisher’s Exact Test used as appropriate whether there was any association between socio-demographic characteristics, knowledge, attitude, and practice scores.

4.1 Socio-demographic information

According to the socio-demographic characteristics information of respondents in table 2 and figure 4 the total response for questionnaire participants were 430 participants. The majority of the respondents were in age group of 18-22 years (52.8%), the rest of them (47.2%) were more than 22 years which 23-27 years (14.9%) was most found and 33-37 years (3.7%) was fewest found. More than half of subjects were females (65.2%) and 34.8% of respondents were males. The results of highest education level showed that 47.0% of respondents had graduated with Bachelor’s degree and there were 40.0% had completed below Bachelor’s degree. Almost 88% of all respondents were students or personnel of Chulalongkorn University, while 12.1% were outsiders. The majority of insiders were students (68.3%), some of them were government officers and university staffs (20.6%), while 11.1% were employee and other occupations including building contractor, food handling, housekeeper, residency, and special instructor. Income and expenditure of respondents less than 10,000 baht/month were found the most (50.2% and 61.5 respectively). Regarding the campaign “Eat hot food, use serving spoon, and always wash your hands”, only few respondents had not ever heard about this campaign (5.4%).

Table 2 Socio-demographic characteristics of respondents

	Characteristics	Number	Percentage (%)
1. Age (years) (N=430)	18-22	227	52.8
	23-27	64	14.9
	28-32	30	7.0
	33-37	16	3.7
	38-42	25	5.8
	43-47	29	6.7
	48-52	20	4.7
	> 52	19	4.4
2. Gender (N=423)	male	147	34.8
	female	276	65.2
3. Highest education (N=430)	Below a Bachelor's Degree	172	40.0
	Bachelor's Degree	202	47.0
	Master's Degree	32	7.4
	Doctoral Degree	24	5.6
4. As a student or personnel of CU (N=430)	yes	378	87.9
	no	52	12.1
5. Status in CU (Occupation) (N=378)	Students	258	68.3
	Officers & Staffs	78	20.6
	Employee and others	42	11.1
6. Income (baht/month) (N=426)	< 10,000	214	50.2
	10,000-20,000	123	28.9
	> 20,000	89	20.9
7. Expenditure (baht/month) (N=423)	< 10,000	260	61.5
	10,000-20,000	104	24.6
	> 20,000	59	13.9
8. Ever hearing the campaign (N=428)	yes	405	94.6
	no	23	5.4

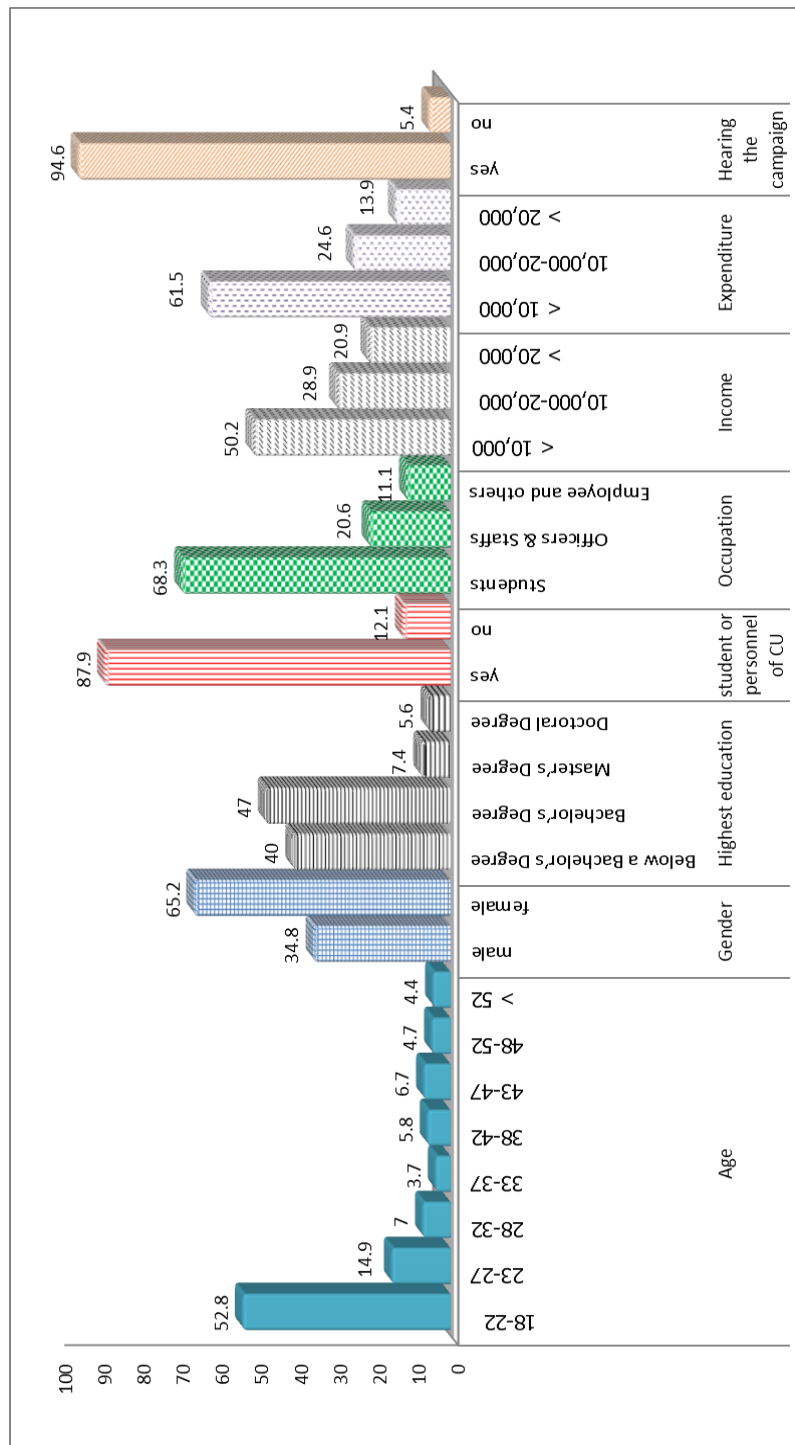


Figure 4 Percentage of respondents in each socio-demographic characteristic

4.2 Knowledge regarding the campaign

Table 3 and figure 5 illustrate the knowledge of respondents who answered a total of 13 questions. Each correct answer was given one point with a total of 13 points. There were 8 positive statements and 5 negative statements. The average knowledge score from the respondents was 11.52 (SD=1.57). The knowledge score was in the range from 4 to 13.

The questionnaire showed in appendix B. The highest item of the correct answer was the question no.2 which almost all respondents recognized that diarrhea is caused by eating unclean food or water contaminated with germs (98.8%) and cooked food should be covered to prevent contamination from mice, insects and dust (98.1%). About 96.3% of respondents knew that eating cooked foods can help prevent food- and water-borne communicable diseases. Eighty-two point three percent of respondents knew that using serving spoon scoop food into their mouth directly is the wrong way. Ninety point two percent of them concerned about hands cleaning after using toilet, or touching garbage or pets, they thought that just only rub their hands with clean towel is not yet enough. Approximately 81.2% of respondents knew that they have to wash their hands to prevent germs contamination into food both before and after cooking. The lowest score of correct answer was question no.3 which 71.4% of them thought that saliva of patients with influenza contaminated in food can cause not only food spoilage, but also communicable diseases.

Table 3 Knowledge of respondents toward the campaign “Eat hot food, use serving spoon, and always wash your hands” (N=430)

Knowledge items	Correct	
	Number (N=430)	Percentage (%)
1. Eating cooked foods can help prevent food- and water-borne communicable diseases.	414	96.3
2. Diarrhea is caused by eating unclean food or water contaminated with germs.	425	98.8
3. Saliva of patients with influenza contaminated in food can cause food spoilage but not for communicable diseases.*	307	71.4

Knowledge items	Correct	
	Number (N=430)	Percentage (%)
4. Eating food freshly cooked over heat can prevent food- and water-borne communicable diseases.	362	84.2
5. Chopping boards and knives used to cut raw food, if continually used to cut cooked food without cleaning, can cause contamination of germs.	392	91.2
6. Cooked food should be covered from mice, insects and dust.	422	98.1
7. Left-over stored cooked food longer than 4 hours should be reheated thoroughly before eating again.	358	83.3
8. The right way to use serving spoon is to put food into your mouth directly.*	354	82.3
9. Before picking food up into your mouth, you have to wash your hands in order to prevent germs contamination in food.	410	95.3
10. Before cooking, you have to wash your hands to prevent germs contamination into food. However, after the cooking is done, there is no need for hands washing.*	349	81.2
11. After finishing using the toilet, or when touching garbage or pets, rubbing your hands with clean towel is enough.*	388	90.2
12. After coughing, sneezing and runny nose, you have to wash your hands thoroughly with soap and water all times to not to be carrier of germs.	408	94.9
13. The right way to wash your hands is by washing with water and soap, and rubbing only your palms.*	364	84.7

* Negative statements

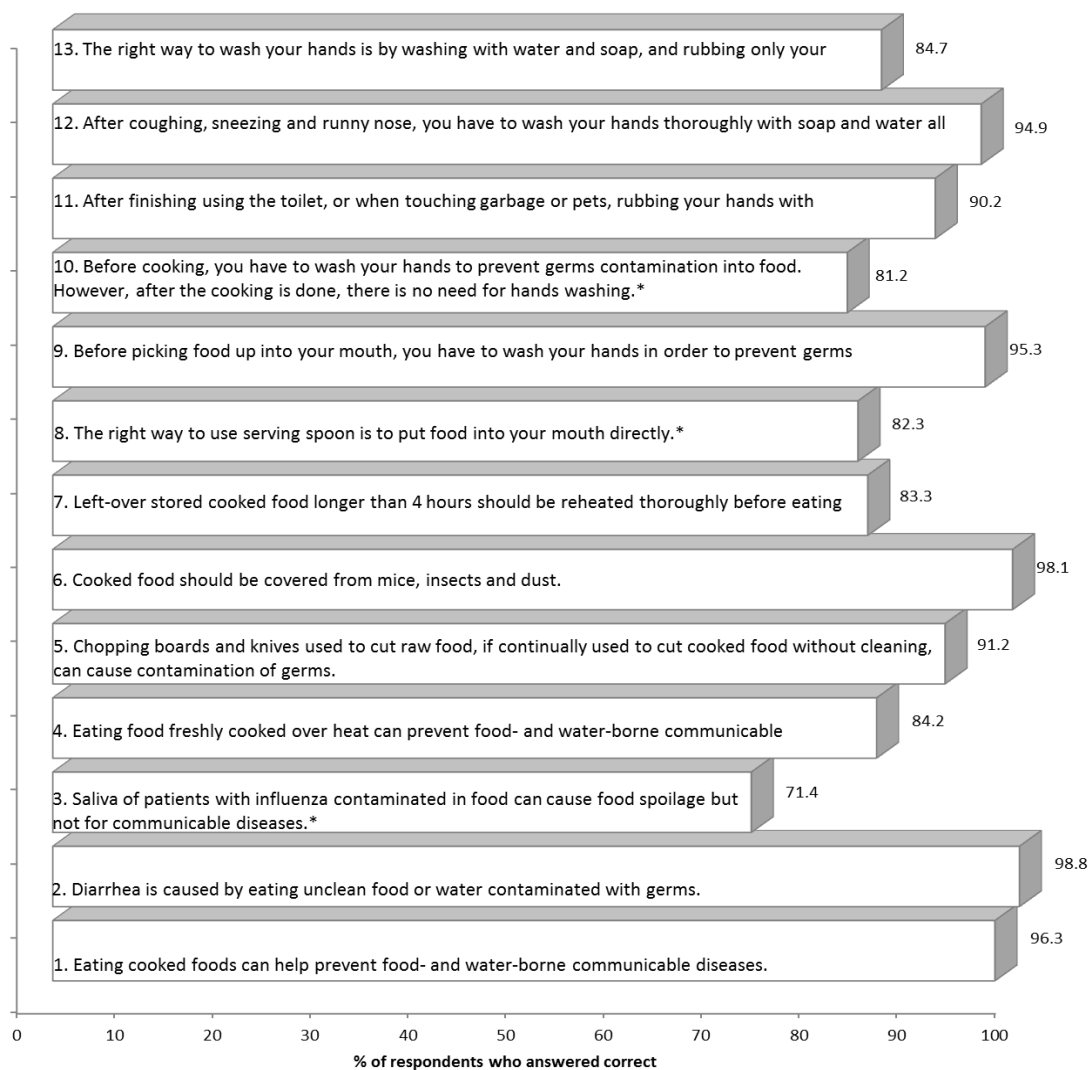


Figure 5 Percentage of respondents who answered correct in each knowledge question

The distribution of the knowledge of respondents showed that 79.8% of respondents had “High level of knowledge”, 18.4% of them had “Moderate level of knowledge”, while only 1.8% of them had “Low level of knowledge” as shown in table 4

Table 4 Distribution of the knowledge levels on the campaign

Knowledge levels	Number (N=430)	Percentage (%)
High level (11-13 scores)	343	79.8
Moderate level (8-10 scores)	79	18.4
Low level (0-7 scores)	8	1.8

4.3 Attitude regarding the campaign

Table 5 and Figure 6 show the percentage distribution of attitude of respondents toward the campaign “Eat hot food, use serving spoon, and always wash your hands”. Participants answered a total of 9 questions with the total score of 36. There were 2 positive statements and 8 negative statements. The average attitude score for all respondents were 26.51 (SD=4.82) out of a possible 36 points. Regarding positive statements, the majority of respondents strongly agreed that the campaign is good for food consumers (77.4%) and agreed to avoid eating steamed blanched clams, raw beef salad, and raw fish (35.1%). Almost all negative statements showed that the respondents disagreed them including diarrhea is not a serious health problem (56.3%), there is no need to reheat leftovers food before eating them again (51.6%), it is inconvenient to always wash their hands before eating (47.9%), washing hands by rubbing only the palms can prevent germs contamination in food (45.3%), it is inconvenient to use serving spoons during meals with friends because it would lead they think of being disgusted (43.7%), and there is no need to use serving spoons during meals with friends (41.9%), while only 1.4% of respondents strongly agreed that juicing lemon onto minced pork can make it cooked and safe to eat.

Table 5 Attitude of respondents toward the campaign “Eat hot food, use serving spoon, and always wash your hands” (N=430)

Attitude items	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	%	%	%	%	%
1. The campaign “Eat hot food, use serving spoon, and always wash your hands” is good for food consumers	77.4	21.9	0.7	0.0	0.0
2. Diarrhea is not a serious health problem.*	3.3	5.3	7.0	56.3	28.1
3. There is no need to reheat leftovers food before eating them again.*	1.9	4.0	20.2	51.6	22.3

Attitude items	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	%	%	%	%	%
4. Juicing lemon onto minced pork can make it cooked and safe to eat.*	1.4	5.6	20.7	30.7	41.6
5. Steamed blanched clams, raw beef salad, and raw fish should be avoided because they are uncooked foods.	28.1	35.1	25.3	7.9	3.5
6. There is no need to use serving spoons during meals with friends.*	2.1	6.0	27.2	41.9	22.8
7. It is inconvenient to use serving spoons during meals with friends, because it would lead they think of being disgusted.*	2.6	7.7	24.9	43.7	21.2
8. It is inconvenient to always wash my hands before eating.*	1.9	10.0	16.5	47.9	23.7
9. Washing hands by rubbing only the palms ensure me that it can prevent germs contamination in food.*	4.2	13.0	14.2	45.3	23.3

* Negative statements

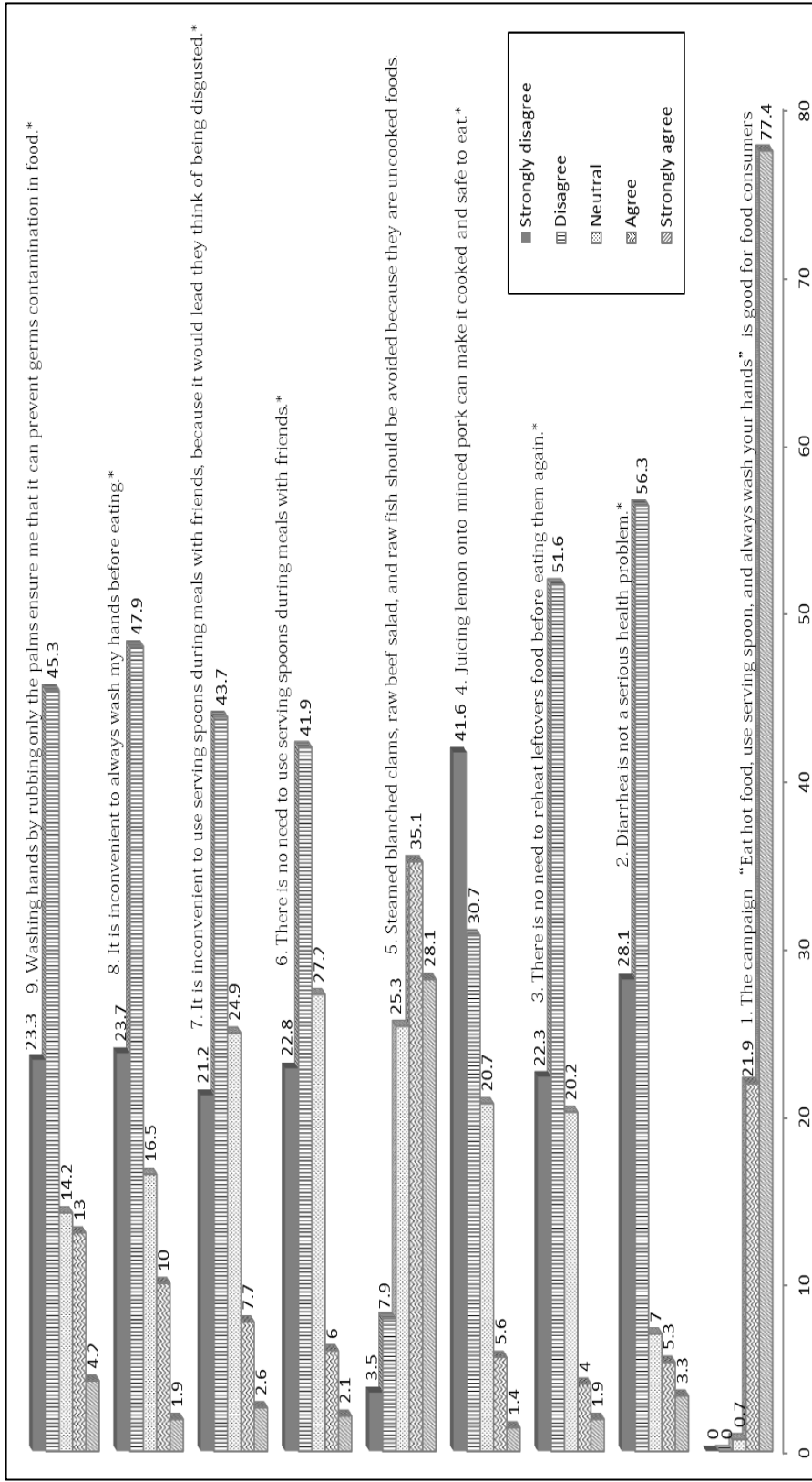


Figure 6 Percentage of respondents in each attitude question

The distribution of attitude levels on the campaign of respondents is shown in table 6 there were 58.4% of respondents who had “neutral attitude”, 33.5% of them had “positive attitude”, while only 8.1% had “negative attitude”.

Table 6 Distribution of the attitude levels on the campaign

Attitude levels	Number (N=430)	Percentage (%)
Positive (29-36 scores)	144	33.5
Neutral (21-28 scores)	251	58.4
Negative (0-20 scores)	35	8.1

4.4 Practice regarding the campaign

Table 7 and figure 7 show the percentage distribution of practice of respondents toward the campaign “Eat hot food, use serving spoon, and always wash your hands”. Participants answered a total of 8 questions with the total score of 32. There were 4 positive statements and 4 negative statements. The average practice score for all respondents were 23.05 (SD=3.18) out of a possible 32 points. The respondents usually ate food immediately after it is thoroughly cooked over heat (57.4%) and reheated left-over food before eating again (50.9%). Only 8.6% of them always ate uncooked food including uncooked seafood and regular meals. They occasionally did not use serving spoons during meals with close friends (43.7%) and used chopsticks to move bites of food into their mouth, and to stir and search for food in shared dishes (32.6%). Before eating, they sometimes wash their hands (46.5%), wash hands with water and soap (52.1%), and wash hands with water alone (57.9%).

Table 7 Practice of respondents toward the campaign “Eat hot food, use serving spoon, and always wash your hands”

Practice items	Usually	Sometime	Rarely	Never
	%	%	%	%
1. I reheat left-over food before eating again	50.9	43.5	5.1	0.5
2. I eat food immediately after it is thoroughly cooked over heat	57.4	40.5	1.9	0.2

Practice items	Usually	Sometime	Rarely	Never
	%	%	%	%
3. I eat uncooked food including uncooked seafood and regular meals such as steamed blanched clams, raw beef, and raw fish.*	8.6	26.7	43.7	20.9
4. I do not use serving spoons during meals with close friends.*	25.6	43.7	21.9	8.8
5. During meals with friends, I use chopsticks to move bites of food into my mouth, and to stir and search for food in shared dishes.*	13.7	32.6	27.0	26.7
6. I wash my hands before eating	45.6	46.5	7.0	0.9
7. I wash hands with water and soap before eating	31.6	52.1	14.7	1.6
8. I wash hands with water alone before eating.*	24.2	57.9	14.7	3.3

* Negative statements

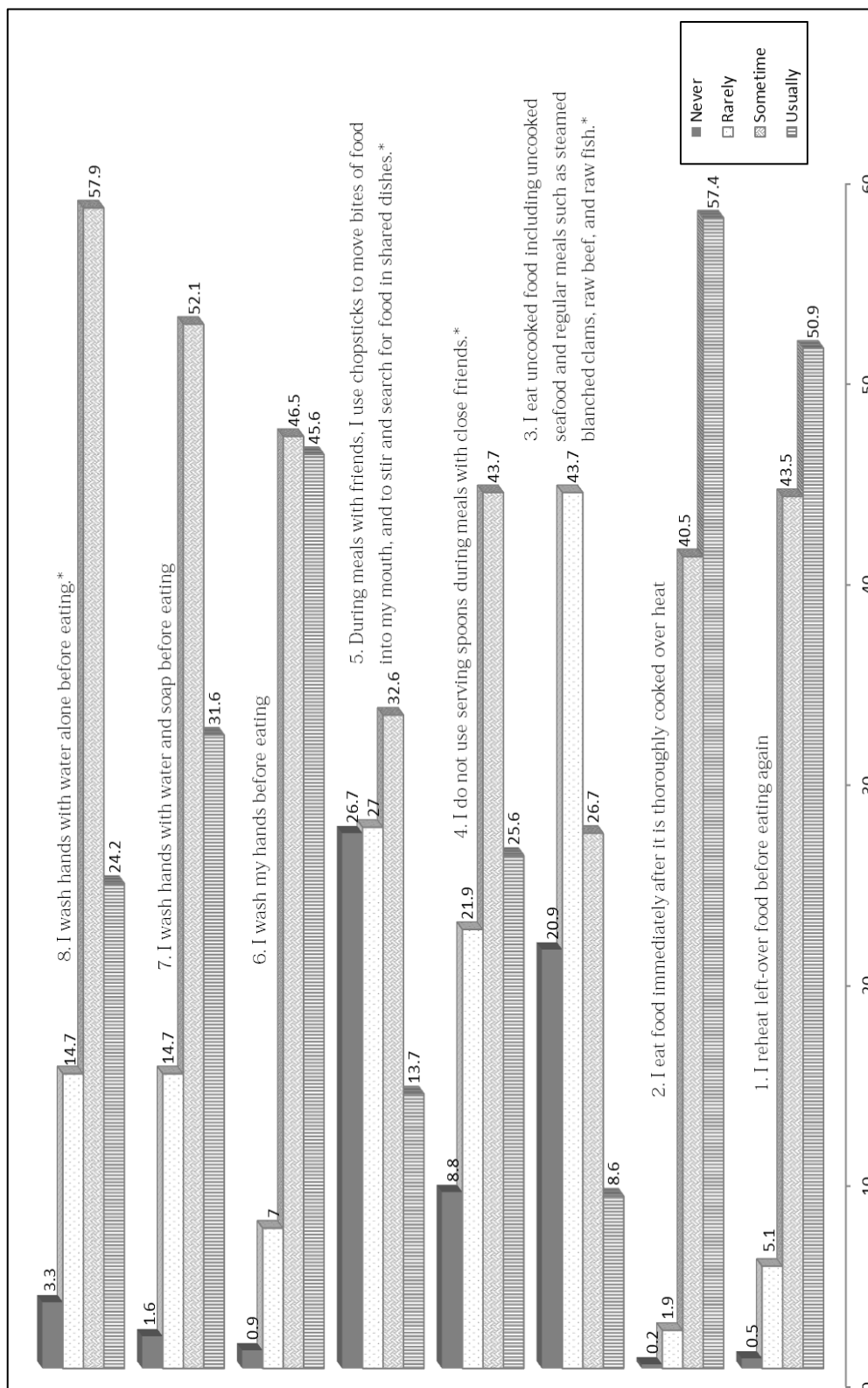


Figure 7 Percentage of respondents in each practice question

The distribution of practice of respondents is shown in table 8 There were 71.2% of respondents who had “fair practice”, 21.9% of them had “good practice”, while only 7.0% had “poor practice”.

Table 8 Distribution of the practice levels on the campaign

Practice levels	Number (N=430)	Percentage (%)
Good practice (26-32 scores)	94	21.9
Fair practice (19-25 scores)	306	71.2
Poor practice (8-18 scores)	30	7.0

4.5 Association between socio-demographic characteristics and knowledge towards the campaign

Table 9 shows the association between socio-demographic characteristics and knowledge towards the campaign “Eat hot food, use serving spoon, and always wash your hands”. It was found that occupation, income per month, and ever hearing about the campaign, were associated significantly with the knowledge ($p=0.015$, 0.009 and 0.012 respectively).

The percentage of high level of knowledge was highest in age group of 18-22 years (79.7%) almost the same as age group older than 22 years (79.8%). In the same way, high level of knowledge was greatest in both male (77.6%) and female (81.5%).

Regarding education, high level of knowledge was topmost in all groups with below a Bachelor’s Degree (76.2%), Bachelor’s Degree (80.7%), Master’s Degree (78.1%), and Doctoral Degree (100.0%). While, moderate to low level of knowledge was lowest in all occupations with student (17.8%), government officers and university staffs (15.4%), and employee and others (35.7%).

Concerning income and expenditure per month, the percentage of high level of knowledge was highest with all respondents who had income and expenditure less than 10,000 baht (84.1% and 80.0% respectively), 10,000-20,000 baht (70.7% and 78.9% respectively), and more than 20,000 baht (83.2% and 84.7% respectively).

Considering the respondents who had ever and never heard about the campaign “Eat hot food, use serving spoon, and always wash your hands”, it was found that both of them had high level of knowledge were 81.2% and 56.5% respectively.

Table 9 Association between socio-demographic and knowledge of respondents towards the campaign

Characteristics	Total Respondents (N)	Knowledge N (%)				p-value ^a
		High	Moderate	Low	Moderate to Low	
Age group (years)						0.986
18-22	227	181 (79.7)	40 (17.6)	6 (2.7)	46 (20.3)	
> 22	203	162 (79.8)	39 (19.2)	2 (1.0)	41 (20.2)	
Gender						0.330
Male	147	114 (77.6)	31 (21.0)	2 (1.4)	33 (22.4)	
Female	276	225 (81.5)	45 (16.3)	6 (2.2)	51 (18.5)	
Education						0.054
Below a Bachelor's Degree	172	131 (76.2)	37 (21.5)	4 (2.3)	41 (23.8)	
Bachelor's Degree	202	163 (80.7)	35 (17.3)	4 (2.0)	39 (19.3)	
Master's Degree	32	25 (78.1)	7 (21.9)	0 (0.0)	7 (21.9)	
Doctoral Degree	24	24 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Occupation						0.015*
Students	258	212 (82.2)	40 (15.5)	6 (2.3)	46 (17.8)	
Officers & staffs	78	66 (84.6)	12 (15.4)	0 (0.0)	12 (15.4)	

Characteristics	Total Respondents (N)	Knowledge N (%)				p-value ^a
		High	Moderate	Low	Moderate to Low	
Employee & others	42	27 (64.3)	13 (31.0)	2 (4.7)	15 (35.7)	0.009*
Income per month (baht)						
< 10,000	214	180 (84.1)	29 (13.6)	5 (2.3)	34 (15.9)	
10,000-20,000	123	87 (70.7)	34 (27.7)	2 (1.6)	36 (29.3)	
> 20,000	89	74 (83.2)	14 (15.7)	1 (1.1)	15 (16.8)	0.640
Expenditure per month (baht)						
< 10,000	260	208 (80.0)	47 (18.1)	5 (1.9)	52 (20.0)	
10,000-20,000	104	82 (78.9)	20 (19.2)	2 (1.9)	22 (21.1)	
> 20,000	59	50 (84.7)	9 (15.3)	0 (0.0)	9 (15.3)	0.012* Fisher's Exact Test
Ever hearing the campaign						
Yes	405	329 (81.2)	71 (17.6)	5 (1.2)	76 (18.8)	
No	23	13 (56.5)	7 (30.4)	3 (13.1)	10 (43.5)	

^a results of association between socio-demographic characteristics and knowledge in “High level” and “Moderate to Low level”

* p<0.05

4.6 Association between socio-demographic characteristics and attitude of respondents towards the campaign

Table 10 showed the association between socio-demographic characteristics and attitude towards the campaign “Eat hot food, use serving spoon, and always wash your hands”. It was found that age ($p=0.009$), education ($p<0.001$), occupation ($p<0.001$), income per month ($p<0.001$), expenditure per month ($p<0.001$), and ever hearing about the campaign ($p=0.004$), were associated significantly with the attitude.

Regarding age of respondents, most of them had neutral attitude which 64.3% were in age group of 18-22 years and 51.7% in older than 22 years. The percentage of positive attitude among male was 30.6% and female was 35.9%.

Considering education, level of neutral attitude was highest in the respondents who had graduated with below Bachelor’s Degree (66.9%) and Bachelor’s Degree (56.9%), while the respondents who had graduated with Master’s and Doctoral degree had positive attitude (50.0% and 70.8% respectively). For occupation of respondents, the percentage of positive attitude was highest in the group with government officers and university staff (52.6%), while students had neutral attitude (64.0%) like employee and others (47.6%). Besides, the percentage of positive attitude was greatest in the group who had income and expenditure more than 20,000 baht per month (59.6% and 61.0% respectively).

Concerning the respondents who had ever and never heard about the campaign “Eat hot food, use serving spoon, and always wash your hands”, it was found that both of them had neutral attitude were 59.3% and 47.8% respectively.

Table 10 Association between socio-demographic characteristics and attitude of respondents towards the campaign

Characteristics	Total Respondents (N)	Attitude N (%)			p-value
		Positive	Neutral	Negative	
Age group (years)					0.009*
18-22	227	61 (26.9)	146 (64.3)	20 (8.8)	
> 22	203	83 (40.9)	105 (51.7)	15 (7.4)	

Characteristics	Total Respondents (N)	Attitude N (%)			p-value
		Positive	Neutral	Negative	
Gender					0.264
Male	147	45 (30.6)	86 (58.5)	16 (10.9)	
Female	276	99 (35.9)	158 (57.2)	19 (6.9)	
Education					0.000**
Below a Bachelor's Degree	172	44 (25.6)	115 (66.9)	13 (7.6)	
Bachelor's Degree	202	67 (33.2)	115 (56.9)	20 (9.9)	
Master's Degree	32	16 (50.0)	14 (43.8)	2 (6.2)	
Doctoral Degree	24	17 (70.8)	7 (29.2)	0 (0.0)	
Occupation					0.000**
Students	258	71 (27.5)	165 (64.0)	22 (8.5)	
Officers & staffs	78	41 (52.6)	34 (43.6)	3 (3.8)	
Employee & others	42	16 (38.1)	20 (47.6)	6 (14.3)	
Income per month (baht)					0.000**
< 10,000	214	62 (29.0)	132 (61.7)	20 (9.3)	
10,000-20,000	123	29 (23.6)	83 (67.5)	11 (8.9)	
> 20,000	89	53 (59.6)	32 (36.0)	4 (4.5)	
Expenditure per month (baht)					0.000**
< 10,000	260	68 (26.2)	163 (62.7)	29 (11.2)	
10,000-20,000	104	39 (37.5)	62 (59.6)	3 (2.9)	
> 20,000	59	36 (61.0)	22 (37.3)	1 (1.7)	
Ever hearing the campaign					0.004*
Yes	405	137 (33.8)	240 (59.3)	28 (6.9)	
No	23	6 (26.1)	11 (47.8)	6 (26.1)	

* p<0.05, ** p<0.001

4.7 Association between socio-demographic characteristics and practice of respondents towards the campaign

Table 11 shows the association between socio-demographic characteristics and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands”. It was found that age ($p<0.001$), education (0.017), occupation ($p<0.001$), income per month ($p<0.001$), and expenditure per month ($p=0.001$), were associated significantly with the practice.

Regarding age of respondents, most of them had fair practice which 79.7% were in age group of 18-22 years and 61.6% in older than 22 years. The percentage of fair practice among male was 72.1% and female was 71.0%.

Considering education, level of fair practice was highest in the respondents who had graduated with below Bachelor’s Degree (75.0%), Bachelor’s Degree (72.8%), and Master’s Degree (59.4%), while a half of the respondents who had graduated Doctoral degree had good practice. For occupation of respondents, the percentage of fair practice was highest in all groups including government officers and university staff (81.0%), students (55.1%) and employee and others (52.4%). Besides, the percentage of fair practice was greatest in all groups who had income and expenditure less than 10,000 baht/month (76.6% and 76.9% respectively), 10,000-20,000 baht/month (74.8% and 67.3% respectively), and more than 20,000 baht/month (53.9% and 57.6% respectively).

Concerning the respondents who had ever and never heard about the campaign “Eat hot food, use serving spoon, and always wash your hands”, it was found that both of them had fair practice were 70.6% and 78.3% respectively.

Table 11 Association between socio-demographic characteristics and practice of respondents towards the campaign

Characteristics	Total Respondents (N)	Practice N (%)			p-value
		Good	Fair	Poor	
Age group (years)					0.000**
18-22	227	24 (10.6)	181 (79.7)	22 (9.7)	
> 22	203	70 (34.5)	125 (61.6)	8 (3.9)	

Characteristics	Total Respondents (N)	Practice N (%)			p-value
		Good	Fair	Poor	
Gender					0.095
Male	147	36 (24.5)	106 (72.1)	5 (3.4)	
Female	276	56 (20.3)	196 (71.0)	24 (8.7)	
Education					0.017*
Below a Bachelor's Degree	172	31 (18.0)	129 (75.0)	12 (7.0)	
Bachelor's Degree	202	42 (20.8)	147 (72.8)	13 (6.4)	
Master's Degree	32	9 (28.1)	19 (59.4)	4 (12.5)	
Doctoral Degree	24	12 (50.0)	11 (45.8)	1 (4.2)	
Occupation					0.000**
Students	258	26 (10.1)	209 (81.0)	23 (8.9)	
Officers & staffs	78	31 (39.7)	43 (55.1)	4 (5.1)	
Employee & others	42	18 (42.9)	22 (52.4)	2 (4.8)	
Income per month (baht)					0.000**
< 10,000	214	33 (15.4)	164 (76.6)	17 (7.9)	
10,000-20,000	123	22 (17.9)	92 (74.8)	9 (7.3)	
> 20,000	89	37 (41.6)	48 (53.9)	4 (4.5)	
Expenditure per month (baht)					0.001*
< 10,000	260	39 (15.0)	200 (76.9)	21 (8.1)	
10,000-20,000	104	28 (26.9)	70 (67.3)	6 (5.8)	
> 20,000	59	23 (39.0)	34 (57.6)	2 (3.4)	
Ever hearing the campaign					0.720
Yes	405	90 (22.2)	286 (70.6)	29 (7.2)	
No	23	4 (17.4)	18 (78.3)	1 (4.3)	

* p<0.05 ** p<0.001

4.8 Association between knowledge and attitude towards the campaign

As presented in table 12, there was significant association between knowledge and attitude of respondents towards the campaign “Eat hot food, use serving spoon, and always wash your hands” ($p < 0.001$).

Table 12 Association between knowledge and attitude of respondents towards the campaign.

Knowledge	Total Respondents (N)	Attitude N (%)			p-value
		Positive	Neutral	Negative	
High	343	136 (39.7)	196 (57.1)	11 (3.2)	
Moderate to low	87	8 (9.2)	55 (63.2)	24 (27.6)	0.000*

* $p < 0.001$

4.9 Association among knowledge and practice towards the campaign

According to table 13, there was no significant association between knowledge and practice of respondents about the campaign “Eat hot food, use serving spoon, and always wash your hands” ($p = 0.488$).

Table 13 Association between knowledge and practice of respondents towards the campaign.

Knowledge level	Total Respondents (N)	Practice N (%)			p-value
		Good	Fair	Poor	
High	343	79 (23.0)	241 (70.3)	23 (6.7)	
Moderate to low	87	15 (17.2)	65 (74.7)	7 (8.0)	0.488

4.10 Association among attitude and practice towards the campaign

There was significant association between attitude and practice of respondents about the campaign “Eat hot food, use serving spoon, and always wash your hands” ($p < 0.001$), as presented in table 14.

Table 14 Association between attitude and practice of respondents towards the campaign.

Attitude level	Total Respondents (N)	Practice N (%)			p-value
		Good	Fair	Poor	
Positive	144	49 (34.0)	91 (63.2)	4 (2.8)	0.000*
Neutral	251	42 (16.7)	191 (76.1)	18 (7.2)	
Negative	35	3 (8.6)	24 (68.6)	8 (22.9)	

* p<0.001



CHAPTER V

DISCUSSTION, CONCLUSIONS AND RECOMMENDATIONS

The study was aimed to access the level of knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens, Bangkok, Thailand. The discussion is based on the finding collected from 430 consumers in Chulalongkorn University’s canteens.

5.1 Socio-demographic information

From this study, it was found that the majority of respondents was in the age group of 18-22 years (52.8%) and was students 68.3%. This results aligned with Hathaikarn and Umporn (2007) that explained the students in Rajabhat Nakornprathom University were mostly in the range of 18-21 years (94.4%) (Hathaikarn Sotedee and Umporn Chimplee 2007, access on October 2, 2014). More than half of respondents were females (65.2%) that accorded with the report on total number of students in Chulalongkorn University which shown the number of females more than males in all faculties (Chulalongkorn University 2014, access on April 6, 2015). The majority of respondents had graduated with Bachelor’s degree (47.0%) and below Bachelor’s degree (40.0%) respectively.

Regarding income of respondents, they got less than 10,000 baht/month (50.2%) in the same direction as their expenditure per month (61.5%). These findings were in line with the most occupation of respondents was students (68.3%) and complied with the study on taking time of CU’s students (Jirapach Muangkaew, Chayada Pikulngern et al. 2013, access on May 5, 2015) that showed income of the most participants less than 10,000 baht/month (21% less than 3,000 baht, 52% in range of 3,001-5,000 baht, 18% in range of 5,001-7,000 baht, and 9% more than 7,000 baht). Besides, according to the study on causal factors influencing indebtedness of undergraduate students in Bangkok (Phonphat Intaravorrachit, Sireerat Chetsumon et al. 2014, p.1-15), it found that the most of undergraduate students in Bangkok had income same as expenditure around 5,001-10,000 baht/month.

Concerning the campaign “Eat hot food, use serving spoon, and always wash your hands”, only few respondents had not ever heard about this campaign (5.4%) that aligned

with the survey on attitude of people about diseases and health risk from travelling which emphasized on food poisoning (Sopon Mekthon 2014, access on May 8, 2015), the subjects were 3,112 Thai people who was over 15 years old, it found that only 5.2% of them had not ever heard about this campaign. This result may reflect the good implementation and public relation of relevant authorities about the campaign.

5.2 Knowledge, Attitude, and Practice towards the campaign

Overall, most of respondents had “high level of knowledge”, “neutral attitude”, and “fair practice” (79.8%, 58.4%, and 71.2% respectively) towards the campaign “Eat hot food, use serving spoon, and always wash your hands”.

The result of knowledge level contrasted with Wittaya (2012) that studied on food consumption behavior of people in Salaung-Keeleake, Mae Rim district, Chiang Mai province, Thailand (Wittaya Tanaree 2012, access on May 8, 2015). Most of consumers had knowledge, attitude, and practice in moderate level. While, only result of practice level aligned with Siow and Norrakiah (2011) that food handlers at 2 cafeterias and canteen of the Universiti Kebangsaan, Malaysia, had moderate knowledge with mean score of 57.8%, positive attitudes on food safety and hygiene (76.9%) and foodborne prevention and control (70.8%), and average practices in all parts of the questions including hand washing (68.0%), personnel hygiene (66.5%), raw materials management (66.2%), food safety control (59.3%), and gloves usage (52.3%) (Siow and Norrakiah 2011, p.403-410). Besides, Anukool (2008) found that knowledge, attitude, and practice on food consumption of undergraduate students in Ramkhamhaeng University were poor ($\bar{x}=52$), good ($\bar{x}=3.48$), and fair ($\bar{x}=1.66$) (Anukool Polsiri 2008, p.49-60).

Considering each item, almost all respondents (98.8%) knew that diarrhea is caused by eating unclean food or water contaminated with germs and 84.4% of them disagree and strongly disagree that diarrhea is not a serious health problem. It may be explained that most of respondents knew and paid attention about such problem which will made them careful to eat food more. This result more than the study of Lilian et al.(2012) that evaluated the level of knowledge on food safety of food handles in the municipal schools of Camaçari, Bahia in northeast Brazil, 88.0% of participants knew that bloody diarrhea can be transmitted by food (Lilian S. Soares, Rogeria C.C. Almeida et al. 2012, p.206-213). While GK Osagbemi et al. (2010) found that only about 37.1% of participants who were responsible for food handling in Okene Metropolis, Nigeria,

thought that food poisoning was result of eating contaminated food (GK Osagbemi, et al. 2010, 61-64).

Regarding knowledge in term of “Eat hot food”, most of respondents knew that eating cooked foods can help prevent food- and water-borne communicable diseases (96.3%), chopping boards and knives used to cut raw food, if continually used to cut cooked food without cleaning, can cause contamination of germs (91.2%), and eating food freshly cooked over heat can prevent food- and water-borne communicable diseases (84.2%). That means they knew how to handle and eating hot food to prevent food- and water-borne communicable diseases. These findings aligned with Ibrahim et al. (2010) that assessed the knowledge of food safety and hygiene among students in university cookery programs in Turkey, 89.0% of respondents concerned that improper heating of food causes food-borne illnesses, but more than half of them thought that meat can be chopped up with vegetables on the same cutting board (Ibrahim Giritlioglu, et al. 2011, p.838-842).

For attitude and practice in term of “Eat hot food”, about 72.3% of respondents disagreed and strongly disagreed that juicing lemon onto minced pork can make it cooked and safe to eat. Most of them (64.6%) rarely and never ate uncooked food including uncooked seafood and regular meals such as steamed blanched clams, raw beef, and raw fish. These findings less than the study of Kanokwan et al. (2011), 80.4% of subjects agreed and strongly disagreed that adding lemon juice and red ant onto raw fish in spicy condiment can make it cooked, and 86.7% of subjects rarely and never ate raw fish in spicy condiment and minced fish spicy salad with herbs which added red ant and lemon juice instead cooked by heating (Kanokwan Kanngern, et al. 2011, 76-87). It may be possible that factor of environments or cultures may had different attitude and eating behavior of consumers.

Concerning “Use serving spoon”, the knowledge answers indicated that some respondents (17.7%) did not know that using serving spoon scoop food into their mouth directly was the wrong way. The correct way is using serving spoon, not their own spoon, to scoop food from shared dish into their own dish before eating (Division of Nutrition 2003, p.50). Although 64.7% of respondents disagreed and strongly disagreed that no need to use serving spoons during meals with friends, almost 30% of them had neutral attitude that they may tend to agree or disagree that. Therefore they should be raised their knowledge and attitude more about using serving spoon.

With regard to practice in term of “Use serving spoon”, 43.7% of them occasionally did not use serving spoons during meals with close friends that approximate to the study of Hathaikarn and Umporn (2007), studied on food consumption behavior among students in Rajaphat Nakhon pathom University, it found that most of students used infrequently serving spoon to eat (44.5 %) (Hathaikarn Sotedee and Umporn Chimplee 2007, access on October 2, 2014). It was noticed that around a half of consumers sometime use serving spoon. If they did not use it, they had occasion to get communicable diseases transmitted by foods. Therefore, having good practice more, help to reduce such chance more.

Regarding “Wash your hands”, 18.8% of respondents did not know that besides washing hands before cooking, they also need to do that after cooking. Therefore, they should get more knowledge about personal hygiene. For attitude, 17.2% of them agree and strongly agree that washing hands by rubbing only the palms ensure them that it can prevent germ contamination in food, so they should be raised their attitude on washings hands with cover all steps. Before eating, only 0.9% of them never washed their hands that less than the study of Hathaikarn and Umporn (Hathaikarn Sotedee and Umporn Chimplee 2007, access on October 2, 2014) and 4th DDC Poll (Sopon Mekthon 2014, access on May 8, 2015), percentage of subjects who never washed their hands before eating were 2.3% and 4.5% respectively. Besides, more than half of respondents sometimes washed hands with water alone (57.9%) and sometimes washed hands with water and soap (52.1%), it may be possible that there were sinks an soaps not enough for supporting consumers to wash their hands in the canteens.

5.3 Association between socio-demographic characteristics and Knowledge, Attitude, and Practice towards the campaign

The figure 8 shows association between socio-demographic characteristics and Knowledge, Attitude, and Practice towards the campaign.

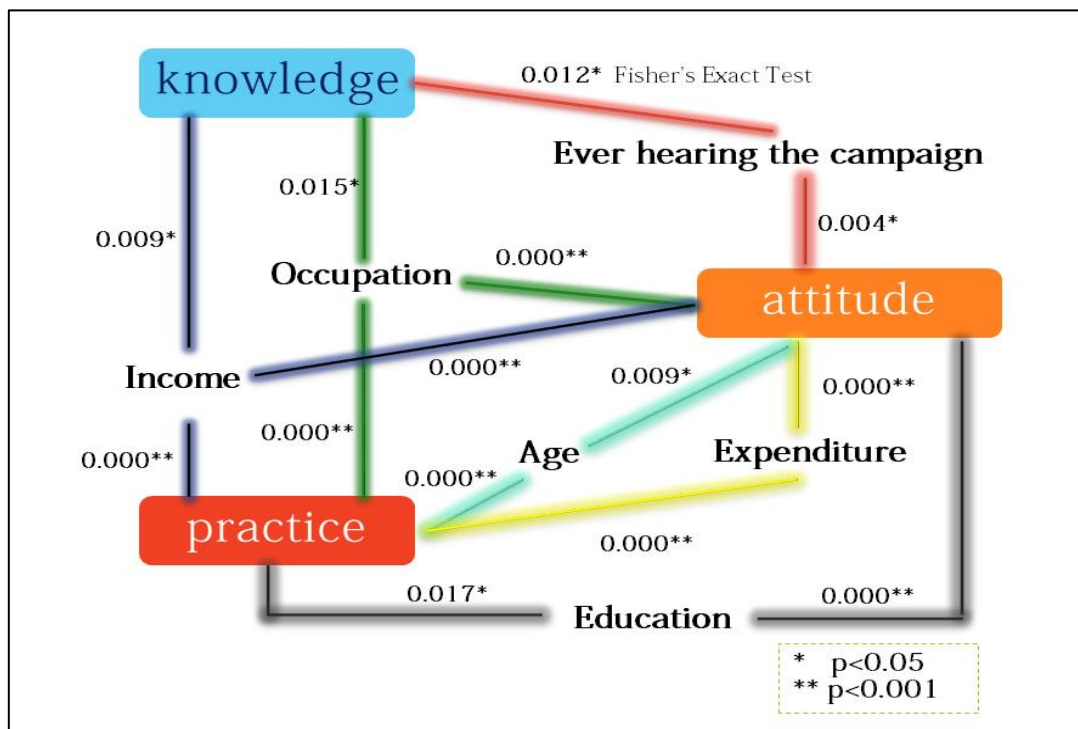


Figure 8 Association between socio-demographic characteristics and K, A, P

The results of this study revealed that occupation ($p = 0.015$), income per month ($p = 0.009$), and ever hearing about the campaign ($p = 0.012$), were associated significantly with the knowledge towards the campaign. These mean respondents with different occupation, income per month, and ever or never hearing about the campaign, had different knowledge. According table 9, percentage of government officers and university staffs had high level of knowledge more than students and employee or other occupations, the respondents who had income 10,000-20,000 baht/month had high level of knowledge fewest, and who had ever hearing the campaign had high level more than who never heard about it.

Besides, age ($p=0.009$), education ($p<0.001$), occupation ($p<0.001$), income per month ($p<0.001$), expenditure per month ($p<0.001$), and ever hearing about the campaign ($p=0.004$), were associated significantly with the attitude the campaign. These mean respondents with different age group, occupation, income per month, expenditure per

month, and ever or never hearing about the campaign, had different attitudes. According table 10, it can be explained that older age group had positive attitude more than younger group, the respondents who had higher education degree had positive attitude more than who had lower degree, the respondents who had higher income and expenditure per month had positive attitude more than who had them lower, and the respondents who had ever hearing the campaign had positive attitude more than who never heard about it.

Furthermore, age ($p < 0.001$), education ($p = 0.017$), occupation ($p < 0.001$), income per month ($p < 0.001$), and expenditure per month ($p = 0.001$), were associated significantly with the practices following the campaign. These mean respondents with different age, education, occupation, income per month, and expenditure per month, had different practices. According table 11, it can be explained that older age group had good practice more than younger group, the respondents who had higher education degree had good practice more than who had lower degree, the respondents who were employee and other occupations had good practice more than government officers, university staffs and students, and who had higher income and expenditure per month had good practice more than who had them lower. While a study by Suwanna et. al. (Suwanna Chaingkuntod, et. al. 2013, access on May 8, 2015) found that age ($p = 0.160$), marriage status ($p = 0.310$), education ($p = 0.577$), and income ($p = 0.989$) were not associated with behavior on food consumption of Pasi Charoen persons in Bangkok, Thailand. Siow and Norrakiah (Siow and Norrakiah 2011, p.403-410) reported significant difference ($p < 0.05$) between practices on food safety of food handles with gender ($p = 0.032$).

5.4 Association between knowledge and attitude, knowledge and practice, and attitude and practice towards the campaign

There was significant association between knowledge and attitude ($p < 0.001$) and attitude and practice ($p < 0.001$) of respondents towards the campaign, while no significant association between knowledge and practice of respondents about the campaign ($p = 0.488$). According table 12 and 14, it can be explained the direction of association between knowledge and attitude and attitude and practice that the respondents who had high level of knowledge had also positive attitude and the respondents who had positive attitude had also good practice.

Anukool (Anukool Polsiri 2008, p.49-60) found that knowledge was strongly, positively correlated with attitude ($r = 0.278$) and practice ($r = 0.141$) on food

consumption of undergraduate students in Ramkhamhaeng University. While attitude was low positively correlated with practices ($r = 0.655$) on food consumption that this aligned with Suwanna et. al. (Suwanna Chaingkuntod et. al. 2013, access on May 8, 2015), attitude on food consumption behavior was associated with practices of Pasi Charoen persons in Bangkok, Thailand ($p < 0.001$).

5.5 Conclusions

This cross-sectional study attempted to assess the knowledge, attitude, and practice towards the campaign “eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteens, Bangkok, Thailand.

Data was collected during April 2015 at Chulalongkorn University’s canteens. Statistics that used in this study were number, percentage, mean, standard deviation, Chi-square test and Fisher’s Exact Test. The sample consisted of 430 consumers with age more than 18 years old in 18 canteens of Chulalongkorn University. The result showed that approximately 65.2% of respondents were female and 52.8% of their ages were in range of 18-22 years old. 47.0% of respondents had highest education with Bachelor’s Degree. 87.9% of them studied or worked at Chulalongkorn University and most of them were students. The majority of respondents had income (50.2%) and expenditure (61.5%) less than 10,000 baht/month. While, 94.6% of respondents had ever heard about the campaign “Eat hot food, use serving spoon, and always wash your hands”.

Most of respondents had “high level of knowledge” (79.8%), “neutral attitude” (58.4%), and “fair practice” (71.2%) towards the campaign “Eat hot food, use serving spoon, and always wash your hands”. The association between socio-demographic characteristics and knowledge, attitude, and practice towards the campaign found that occupation, income per month, and ever hearing about the campaign, were associated significantly with the knowledge ($p = 0.015$, 0.009 , and 0.012 respectively). Age, education, occupation, income per month, expenditure per month, and ever hearing about the campaign, were associated significantly with attitude ($p = 0.009$, $p < 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$, and $p = 0.004$ respectively). While age, education, occupation, income per month, and expenditure per month, were associated significantly with the practice ($p < 0.001$, $p = 0.017$, $p < 0.001$, $p < 0.001$, and $p = 0.001$ respectively). There was significant association between knowledge and attitude ($p < 0.001$), and attitude and practice

($p < 0.001$) of respondents towards the campaign, while no significant association between knowledge and practice of respondents about the campaign ($p = 0.488$).

5.6 Recommendations

According to the findings of this study, the following recommendations should be considered.

1. Since some of respondents did not know that saliva of patients with influenza contaminated in food can cause not only food spoilage, but also for communicable diseases. Therefore, health education programs emphasizing on food- and water- born communicable diseases should be conducted in CU to increase consumers' knowledge.
2. Most of respondents had neutral attitude and fair practice, so health promotion activities especially using serving spoon correctly and washing hands thoroughly should be arranged in CU, such as broadcasting news or good stories about this issues via CU radio station, finding out CU ambassadors to be good practice models, and competition to create idea or propose the projects for creating consumers' attitude and practice in CU etc.
3. The "One Functional-unit One Community" (OFOC) should be addressed issues or projects about food consumption behaviors and personal hygiene for students, faculty staff, general staff, and people in communities near Chulalongkorn University are healthy.

5.7 Further study

This study was reported on knowledge, attitude, and practice focus on the campaign "eat hot food, use serving spoon, and always wash your hands" among food consumers in Chulalongkorn University's canteens, Bangkok, Thailand. Other education institutes, organizations, or communities could be studied by applying the advantage of this study as a general guideline. Moreover, other variables such as environment, and culture may be tested the association with KAP. Furthermore, information, education, and communication materials such as pamphlets of "eat hot food, use serving spoon, and always wash your hands" should be distributed to all faculties of Chulalongkorn University, or posters should also be shown in all canteens to increase consumers' knowledge.

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APPENDICES



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A

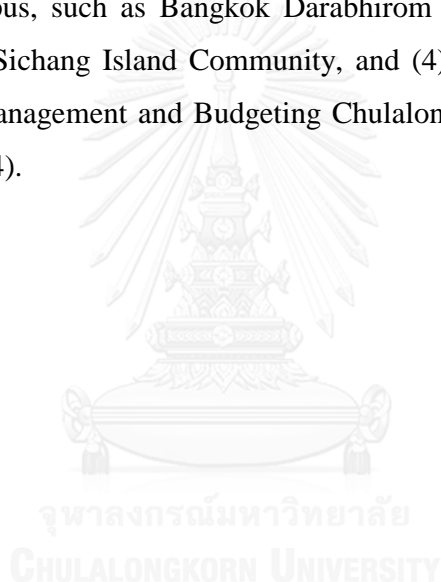
One Functional-unit One Community (OFOC) project

OFOC projects encouraged the faculties, institutes, and colleges of CU to establish community development projects in classes and research on long-term basis. There are certain criteria for OFOC research proposal for funding from Phase 1 to Phase 4 as follows: (Office of Strategy Management and Budgeting Chulalongkorn University 2014, access on September 28, 2014):

- 1) The project should be carried out by aiming for health promotion activities or ability for self-care in the community. The ranges cover community development for sustainability on various aspects of empowerment by participatory community – based research/academic services;
- 2) The project should be consistent with the mission of CU within but not limited to following issues:
 - Public Policy for Health;
 - Environmental Health and Safety;
 - Strengthening the community for self-care by community's members;
 - Promoting knowledge and skills in self-care;
 - Health care services development;
 - Community development through academic services according to the interest of the community or the public at large.
- 3) The targeted communities are not restricted. However, the University will support the projects aiming at communities within CU's neighborhood as high priority;
- 4) As the project plans to build long-term relationship with the community, it is suggested that 4-5 years plan be made available. Though the guidelines for long-term work are encouraged, however, the details of implementation in the first year are required with a broad approach for the following years. If the project is continued from the previous year, the original proposals and the performance should be presented;
- 5) Activities for general people, community leaders and community institutions are targeted, where the level of participation will be taken into consideration as first priority. In addition, it is required that monitoring for the development or relationship building be proposed in a clear and concrete manner;

- 6) The project is organized in the form of volunteer by students, faculty members, and/or staff.
- 7) The project can show development that closely linked to people health in the area or community on one side or other side, and it is good if there are indicators that reflect their learning or power or capacity of communities to take care of their own health.

The OFOC project is managed by the Office of Strategy Management with CU's budget support. The implementation of OFOC project varies, for instance, CU may provide support for academic services, research, educational activities, or students' participation. For the fiscal year 2015, OFOC furthers its focus on (1) the communities surrounding CU campus, such as Bangkok Darabhirom (2) Nan province (3) Nakhon Pathom province (4) Sichang Island Community, and (4) Ang Sila Town Municipality (Office of Strategy Management and Budgeting Chulalongkorn University 2014, access on September 29, 2014).



Appendix B

Questionnaire

Survey objective: To investigate the knowledge, attitude, and practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands” among food consumers in Chulalongkorn University’s canteen, Bangkok, Thailand, by an M.P.H student of the College of Public Health Sciences, Chulalongkorn University.

Code :

Date...../...../.....

Information to be read by respondents:

The questionnaire is prepared for the study about knowledge, attitudes and practices towards the campaign “Eat hot food, use serving spoon, and always wash your hands” (so called “the campaign”) among food consumers in Chulalongkorn University’s canteen. Your kind response will be used to propose some recommendations to the University’s health-related program and to the Department of Health, Ministry of Public Health, Thailand, for their campaign and public relations activity.

Your answer will be kept confidential and remain anonymous. Your name will not be written on the questionnaire or be kept in any other records. Presentation of the research result is an overall picture with no reference to any individual who gives the report.

There are 3 pages in this questionnaire which consist of 4 parts as follows:

Part 1	Socio-demographic questions	8 questions
Part 2	Knowledge towards the campaign	13 questions
Part 3	Attitude towards the campaign	9 questions
Part 4	Practice towards the campaign	8 questions

Thank you very much for your time and your cooperation.

Part 1 Socio-demographic questionsPlease an (✓) in the

1. What is your age? (please round-up)
 1. 18-22 years old 2. 23-27 years old 3. 28-32 years old
 4. 33-37 years old 5. 38-42 years old 6. 43-47 years old
 7. 48-52 years old 8. over 52 years old
2. What is your gender?
 1. Male 2. Female
3. What is the highest level of education you have completed?
 1. Elementary school 2. Secondary school 3. High school
 4. Vocational school 5. Bachelor's degree 6. Master's Degree
 7. Doctoral Degree 8. Other (specify).....
4. Are you the students or the personnel of Chulalongkorn University?
 1. Yes (go to Q5-Q8)
 2. No (go to Q6-Q8)
5. What is your status in Chulalongkorn University?
 1. Student 2. Government officers 3. University staff
 4. Permanent employee 5. Temporary employee
 6. Other (specify).....
6. How much is your monthly income?
 1. < 10,000 baht 2. 10,000-20,000 baht 3. > 20,000 baht
7. How much is your monthly expenditure?
 1. < 10,000 baht 2. 10,000-20,000 baht 3. > 20,000 baht
8. Have you heard about the campaign "Eat hot food, use serving spoon, and always wash your hands" before?
 1. Yes 2. No

Part 2 Knowledge towards the campaign “Eat hot food, use serving spoon, and always wash your hands”

Please check the box (✓) that best corresponds to your knowledge for each question

No	Knowledge	True	False	Don't know
1.	Eating cooked foods can help prevent food- and water-borne communicable diseases			
2.	Diarrhea is caused by eating unclean food or water contaminated with germs			
3.	Saliva of patients with influenza contaminated in food can cause food spoilage but not for communicable diseases			
4.	Eating food freshly cooked over heat can prevent food- and water-borne communicable diseases			
5.	Chopping boards and knives used to cut raw food, if continually used to cut cooked food without cleaning, can cause contamination of germs			
6.	Cooked food should be covered to prevent contamination from mice, insects and dust			
7.	Left-over stored cooked food longer than 4 hours should be reheated thoroughly before eating again.			
8.	The right way to use serving spoon is to put food into your mouth directly			
9.	Before picking food up into your mouth, you have to wash your hands in order to prevent germs contamination in food			
10.	Before cooking, you have to wash your hands to prevent germs contamination into food. However, after the cooking is done, there is no need for hands washing			

No	Knowledge	True	False	Don't know
11.	After finishing using the toilet, or when touching garbage or pets, rubbing your hands with clean towel is enough			
12.	After coughing, sneezing and runny nose, you have to wash your hands thoroughly with soap and water all times to not to be carrier of germs			
13.	The right way to wash your hands is by washing with water and soap, and rubbing only your palms			

Part 3 Attitude towards the campaign “Eat hot food, use serving spoon, and always wash your hands”

Please check the box (✓) that best corresponds to your attitude for each question

No.	Attitude	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	The campaign “Eat hot food, use serving spoon, and always wash your hands” is good for food consumers					
2.	Diarrhea is not a serious health problem					
3.	There is no need to reheat leftovers food before eating them again					
4.	Juicing lemon onto minced pork can make it cooked and safe to eat					

No.	Attitude	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
5.	Steamed blanched clams, raw beef salad, and raw fish should be avoided because they are uncooked foods.					
6.	There is no need to use serving spoons during meals with friends.					
7.	It is inconvenient to use serving spoons during meals with friends, because it would lead they think of being disgusted.					
8.	It is inconvenient to always wash my hands before eating.					
9.	Washing hands by rubbing only the palms ensures me that it can prevent germs contamination in food					

Part 4 Practice towards the campaign “Eat hot food, use serving spoon, and always wash your hands”

Please check the box (✓) that best corresponds to your practice for each question

No.	Practice	Usually	Sometimes	Rarely	Never
1.	I reheat left-over food before eating again				
2.	I eat food immediately after it is thoroughly cooked over heat				
3.	I eat uncooked food including uncooked seafood and regular meals such as steamed blanched clams, raw beef, and raw fish.				
4.	I do not use serving spoons during meals with close friends				
5.	During meals with friends, I use chopsticks to move bites of food into my mouth, and to stir and search for food in shared dishes				
6.	I wash my hands before eating				
7.	I wash hands with water and soap before eating				
8.	I wash hands with water alone before eating				

Appendix C

Questionnaire (Thai version)

แบบสอบถาม

วัตถุประสงค์ของการสำรวจ : เพื่อสำรวจความรู้ เจตคติ และการปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ” ของผู้บริโภคร้านอาหารในร้านอาหารของจุฬาลงกรณ์มหาวิทยาลัย กรุงเทพมหานคร ประเทศไทย โดยนิสิตมหบัณฑิต วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

เลขที่แบบสอบถาม :

วันที่...../...../.....

คำชี้แจง:

แบบสอบถามชุดนี้จัดทำขึ้นเพื่อศึกษาความรู้ ทักษะ และการปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ” ของผู้บริโภคร้านอาหารในร้านอาหารของจุฬาลงกรณ์มหาวิทยาลัย ข้อมูลที่ได้จากการตอบแบบสอบถามจะใช้ในการเสนอคำแนะนำต่อโครงการของมหาวิทยาลัยที่เกี่ยวข้องกับสุขภาพและต่อกรมอนามัยเกี่ยวกับการรณรงค์ประชาสัมพันธ์โครงการนี้

ข้อมูลที่เกี่ยวข้องกับท่านจะเก็บเป็นความลับ หากมีการเสนอผลการวิจัยจะเสนอเป็นภาพรวม ข้อมูลใดที่สามารถระบุถึงตัวท่านได้จะไม่ปรากฏในรายงาน

แบบสอบถามมีทั้งหมด 3 หน้า แบ่งออกเป็น 4 ส่วนดังนี้

ส่วนที่ 1 ข้อมูลทั่วไปลักษณะทางประชากร	จำนวน 8 ข้อ
ส่วนที่ 2 ความรู้เกี่ยวกับการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”	จำนวน 13 ข้อ
ส่วนที่ 3 ทักษะต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”	จำนวน 9 ข้อ
ส่วนที่ 4 การปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”	จำนวน 8 ข้อ

ขอขอบคุณทุกท่านสำหรับเวลาและสำหรับข้อมูลในแบบสอบถาม

ส่วนที่ 1 ข้อมูลทั่วไปลักษณะทางประชากร

กรุณาใส่เครื่องหมาย (✓) ใน

1. ท่านอายุ.....ปี (ปัดขึ้นเต็มปี)
 1. 18-22 ปี
 2. 23-27 ปี
 3. 28-32 ปี
 4. 33-37 ปี
 5. 38-42 ปี
 6. 43-47 ปี
 7. 48-52 ปี
 8. มากกว่า 52 ปี
2. เพศ
 1. ชาย
 2. หญิง
3. ระดับการศึกษาสูงสุดที่ท่านสำเร็จการศึกษา
 1. ประถมศึกษา
 2. มัธยมศึกษาตอนต้น
 3. มัธยมศึกษาตอนปลาย
 4. อนุปริญญา/ปวส.
 5. ปริญญาตรี
 6. ปริญญาโท
 7. ปริญญาเอก
 8. อื่นๆ (โปรดระบุ).....
4. ท่านเรียนหรือทำงานอยู่ที่จุฬาลงกรณ์มหาวิทยาลัยใช่หรือไม่
 1. ใช่ (ตอบข้อ 5-8)
 2. ไม่ใช่ (ตอบข้อ 6-8)
5. ท่านอยู่ในสถานภาพใดของจุฬาลงกรณ์มหาวิทยาลัย
 1. นิสิต
 2. ข้าราชการ
 3. พนักงานมหาวิทยาลัย
 4. ลูกจ้างประจำ
 5. ลูกจ้างชั่วคราว
 6. อื่นๆ (โปรดระบุ).....
6. รายได้เฉลี่ยของท่าน.....บาทต่อเดือน
 1. < 10,000 บาท
 2. 10,000-20,000 บาท
 3. > 20,000 บาท
7. รายจ่ายเฉลี่ยของท่าน.....บาทต่อเดือน
 1. < 10,000 บาท
 2. 10,000-20,000 บาท
 3. > 20,000 บาท
8. ท่านเคยได้ยื่นการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”
 1. เคย
 2. ไม่เคย

ส่วนที่ 2 ความรู้เกี่ยวกับการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”

กรุณาใส่เครื่องหมาย (✓) ในช่องคำตอบที่ตรงกับความรู้ของท่านมากที่สุด

ข้อ	ความรู้	ถูก	ผิด	ไม่ทราบ
1.	การรับประทานอาหารที่สุกสามารถช่วยป้องกันโรคติดต่อทางอาหารและน้ำได้			
2.	โรคอุจจาระร่วงเกิดจากการรับประทานอาหารหรือน้ำที่ไม่สะอาดซึ่งมีเชื้อโรคปนเปื้อน			
3.	ถ้าน้ำลายของผู้ป่วยที่เป็นโรคไข้หวัดใหญ่ปนเปื้อนลงไป ในอาหารสามารถทำให้อาหารเน่าเสียได้แต่ไม่ทำให้เกิด			

ข้อ	ความรู้	ถูก	ผิด	ไม่ทราบ
	โรคติดต่อ			
4.	การรับประทานอาหารทันทีหลังจากปรุงให้สุกด้วยความร้อน สามารถป้องกันโรคติดต่อทางอาหารและน้ำได้			
5.	มีดและเขียงที่ใช้หั่นอาหารดิบแล้วนำมาหั่นอาหารสุกโดยไม่ได้ล้างทำความสะอาดก่อน ทำให้เกิดการปนเปื้อนเชื้อโรคได้			
6.	อาหารที่ปรุงสุกแล้วต้องปกปิดเพื่อป้องกันหนู, แมลงนำโรค และฝุ่นละออง			
7.	อาหารปรุงสุกที่เหลือจากการรับประทานและเก็บไว้นานเกินกว่า 4 ชั่วโมง ต้องอุ่นให้ร้อนอย่างทั่วถึงก่อนนำมารับประทานอีกครั้ง			
8.	การใช้ช้อนกลางที่ถูกต้อง คือการใช้ช้อนกลางตักอาหารรับประทานทันที			
9.	ก่อนจะใช้มือหยิบจับอาหารเข้าปาก จะต้องล้างมือทุกครั้งเพื่อป้องกันเชื้อโรคปนเปื้อนไปในอาหาร			
10.	ก่อนการปรุงอาหารจะต้องล้างมือเพื่อป้องกันเชื้อโรคปนเปื้อนไปในอาหาร แต่ภายหลังการปรุงอาหารเสร็จแล้วไม่จำเป็นต้องล้างมือ			
11.	หลังจากเข้าห้องน้ำ, สัมผัสขยะหรือสัตว์เลี้ยงแล้ว ต้องใช้ผ้าสะอาดเช็ดมือให้ทั่วโดยไม่ต้องล้างมือ			
12.	หลังการไอ จาม และสั่งน้ำมูก ต้องล้างมือให้สะอาดด้วยน้ำและสบู่ทุกครั้งเพื่อไม่ให้เป็นที่ล่อนำเชื้อโรค			
13.	การล้างมือที่ถูกต้องคือล้างด้วยน้ำและสบู่โดยถูเฉพาะบริเวณฝ่ามือเท่านั้น			

ส่วนที่ 3 เจตคติเกี่ยวกับการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”

กรุณาทำเครื่องหมาย (✓) ในช่องคำตอบที่ตรงกับความเห็นของท่านมากที่สุด

ข้อ	เจตคติ	เห็นด้วย อย่างยิ่ง	เห็น ด้วย	เฉยๆ	ไม่เห็น ด้วย	ไม่เห็นด้วย อย่างยิ่ง
1.	การรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ” เป็นสิ่งที่ดีต่อผู้บริโภค อาหาร					
2.	โรคอุจจาระร่วงเป็นปัญหาสุขภาพ ที่ไม่น่ากังวล					
3.	ไม่จำเป็นต้องอุ่นอาหารที่เหลือ ก่อนการรับประทานอีกครั้ง					
4.	การบีบน้ำมะนาวใส่หมูสับ ช่วย ทำให้เนื้อหมูสุกและรับประทาน ได้อย่างปลอดภัย					
5.	ควรหลีกเลี่ยงการรับประทาน หอยแครงลวก ลาบดิบ และปลา ดิบ เนื่องจากเป็นอาหารที่ไม่สุก					
6.	ไม่จำเป็นต้องใช้ช้อนกลางระหว่าง การรับประทานอาหารกับเพื่อน สนิท					
7.	ไม่อยากใช้ช้อนกลางรับประทาน อาหาร เพราะกลัวเพื่อนจะหาว่า รังเกียจในการใช้ช้อนร่วมกัน					
8.	เป็นเรื่องที่ยุงยากหรือไม่สะดวกถ้า ต้องล้างมือก่อนรับประทานอาหาร					
9.	การล้างมือโดยเฉพาะบริเวณฝ่า มือ ทำให้มั่นใจได้ว่าสามารถ ป้องกันเชื้อโรคปนเปื้อน ไปใน อาหารได้					

ส่วนที่ 4 การปฏิบัติต่อการรณรงค์ “กินร้อน ช้อนกลาง ล้างมือ”

กรุณาทำเครื่องหมาย (✓) ในช่องคำตอบที่ตรงกับการปฏิบัติของท่านมากที่สุด

ข้อ	การปฏิบัติ	ทำเป็นประจำ	ทำเป็นบางครั้ง	นานๆ ทำสักครั้ง	ไม่เคยทำเลย
1.	อุ่นอาหารที่เหลือก่อนรับประทานอีกครั้ง				
2.	รับประทานอาหารทันทีหลังจากปรุงอาหารให้สุก				
3.	รับประทานอาหารที่ไม่สุก ทั้งอาหารทะเลและอาหารทั่วไป เช่น หอยแครง ลวก ลาบดิบ ปลาดิบ				
4.	ไม่ใช้ช้อนกลางระหว่างรับประทานอาหารกับเพื่อนสนิท				
5.	ใช้ตะเกียบคีบอาหารเข้าปากแล้วคนหรือควานหาอาหารในจานใหญ่ที่รับประทานร่วมกันกับเพื่อน				
6.	ล้างมือก่อนรับประทานอาหาร				
7.	ล้างมือด้วยน้ำและสบู่ก่อนรับประทานอาหาร				
8.	ล้างมือด้วยน้ำเพียงอย่างเดียวก่อนรับประทานอาหาร				

VITA

Mrs. Kunlanant Senkham was born on the 10 November, 1975, in Nakhon Phanom Province, Thailand. She received a Bachelor of Sciences in Food Technology and Nutrition in 1998 from Mahasarakham University, Thailand. After graduated she worked as Medical Scientist in the Department of Medical Sciences, Food Technician in the Food and Drug Administration, and Plan and Policy Analyst in the Department of Health, the Ministry of Public Health, Thailand, respectively. She continued her study for a Master of Public Health in Health Policy and Management, Chulalongkorn University, Thailand, in 2014 and completed the program in 2015.





จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY