

**THE DEVELOPMENT OF HEALTH PROMOTING SCHOOL
PROGRAM ON FOOD CONSUMPTION BEHAVIORS
OF PRIMARY SCHOOL STUDENTS IN
PRACHINBURI MUNICIPALITY**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
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THE DEGREE OF MASTER OF SCIENCE (PUBLIC HEALTH)
MAJOR IN HEALTH EDUCATION AND BEHAVIORAL SCIENCES
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Thesis

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STUDENTS IN PRACHINBURI MUNICIPALITY**

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THE DEVELOPMENT OF HEALTH PROMOTING SCHOOL PROGRAM ON FOOD CONSUMPTION BEHAVIORS OF PRIMARY SCHOOL STUDENTS IN PRACHINBURI MUNICIPALITY

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ABSTRACT

This quasi-experimental research aimed to study the modification of food consumption behavior of 57 grade 6 students attending Municipal school 3, Prachinburi Muang Municipality. The school was selected randomly. A questionnaire was used to gather data regarding food consumption knowledge, attitudes and behaviors. The data analysis was done by computing frequency, percentage, arithmetic means, and standard deviation. The comparison analysis of the mean scores and standard deviation of knowledge, attitudes and behaviors regarding food consumption before and after the program, was done by computing Paired samples t-test. The results of the research showed that the knowledge of the experimental group after the program was significantly higher than before the program (p-value=.000). The attitude score toward food consumption, after the program, of the experimental group was significantly higher than before the program (p-value=.04). It was also found that food consumption behavior after the program was significantly better than before the program (p-value = 0.14).

KEY WORDS : PARTICIPATORY LEARNING THEORY/SOCIAL SUPPORT/
FOOD CONSUMPTION BEHAVIOR/GRAD 6 STUDENTS

107 pp.

การประยุกต์ทฤษฎีการเรียนรู้แบบมีส่วนร่วม ร่วมกับแรงสนับสนุนทางสังคม เพื่อปรับเปลี่ยนพฤติกรรมการบริโภคอาหาร ของนักเรียนชั้นประถมศึกษาปีที่ 6 เขตเทศบาลเมืองปราจีนบุรี
(THE DEVELOPMENT OF HEALTH PROMOTING SCHOOL PROGRAM ON FOOD CONSUMPTION BEHAVIORS OF PRIMARY SCHOOL STUDENTS IN PRACHINBURI MUNICIPALITY)

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บทคัดย่อ

การวิจัยในครั้งนี้ เป็นการวิจัยกึ่งทดลอง (Quasi-Experimental Research) มีวัตถุประสงค์เพื่อศึกษาการปรับเปลี่ยนพฤติกรรมการบริโภคอาหารของนักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 เขตเทศบาลเมืองที่เข้าร่วมโปรแกรมสุขศึกษา กลุ่มตัวอย่างในการศึกษาครั้งนี้ ได้แก่ นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 เขตเทศบาลเมืองปราจีนบุรี จำนวน 57 คน สุ่มเลือกโรงเรียนโดยการจับฉลาก เก็บข้อมูลโดยใช้แบบสอบถาม ความรู้ ทัศนคติ และพฤติกรรม การบริโภคอาหาร การวิเคราะห์ข้อมูลโดยใช้ค่า การแจกแจงความถี่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน เปรียบเทียบข้อมูลค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐานของความรู้ ทัศนคติ และพฤติกรรมการบริโภคอาหารของนักเรียน กลุ่มตัวอย่าง ก่อนและหลังการทดลอง ด้วยสถิติ Paired samples t-test ผลการวิจัยพบว่า กลุ่มตัวอย่างมีคะแนนความรู้เรื่องการบริโภคอาหาร หลังการทดลองดีกว่าก่อนการทดลองอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (P-VALUE = .000) กลุ่มตัวอย่างมีคะแนนทัศนคติต่อการบริโภคอาหาร หลังการทดลองดีกว่าก่อนการทดลองอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (P-VALUE = .004) มีคะแนนพฤติกรรมต่อการบริโภคอาหาร หลังการทดลองดีกว่าก่อนการทดลองอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 (P-VALUE = .014)

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CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

According to the Eighth National Socio-Economic Plan (B.E.2540-2544) and the Ninth National Socio-Economic Plan (B.E.2545-2549), human resource development has been set as the main objective of the two plans with the emphasis on human-centered. The balanced development has also been recognized as regards to individual, socio-economic, and environment especially the development of good management system for all levels. The “Efficient Economics” philosophy has been used as the leading philosophy for the development and management of the country including the implementation of the Eighth National Public Health Plan (B.E.2540-2544) and the Ninth National Public Health Plan (B.E.2545-2549) which emphasized on capacity development of Thai citizen especially health behavior as well as the development of the total health system (Bureau of Policy and Strategy, Ministry of Public Health, 2005 : 37-38). Health relates to variety of factors, within the individuals, environment and the health service system. The present situation of Thai people’s health risk behaviors affect a lot on the safety of the Thai people’s life and are the national problems affecting socio-economic security of the country. The study about the disease burden from health risk factors of Thai people was carried out by the Bureau of Policy and strategy, Ministry of Public Health in 1999 by studying 13 co-risk factors that cause many diseases. It was found that the risk factors that cause significant diseases are ; unsafe sex ; smoking alcohol drinking, high blood pressure, safely helmet nonuse among bicyclists, overweight and obesity, malnutrition, higher blood cholesterol, less vegetable and fruit consumption, and lack of physical exercise. The analysis of disease burdens of males and females showed that unsafe sex is the risk factor that causes most of the diseases both for males and females. The next risk factors for males are smoking, alcohol drinking, and safely helmet nonuse while riding bicycles.

For females, the risk factors are : high body, mass Index (overweight or obesity), high blood pressure, smoking, and high blood cholesterol, respectively. It was evidenced that most of the health risk factors that cause disease burden are related with health risk behavior (Bureau of Policy and Strategy, Ministry of Public Health, 2005 : 121).

Food consumption of Thai people has been changed in accordance with the changed lifestyles and the difference between the people in the urban and rural areas especially among the people in the urban areas whereas the consumption of meat and fat has been increased but less vegetable and fruit consumption has been decreased. Adolescents like to consume more western food than local or Thai food. Because lifestyles of people has been changed to rapid lifestyles, as most people have to rely on already cooked food or semi-cooked food. This trend was found both in urban and rural areas. People in Bangkok spent about 50% of the total cost for food for the already cooked food or semi-cooked food while in the rural areas it was found that about 20% has been used for already cooked or semi-food cook (Bureau of Policy and Strategy, Ministry of Public Health, 2005 : 122). According to the data from the Survey of the National Statistics Bureau, it was found that regarding the selection for buying food, more than 60 percent of the people thought about cleanliness and delicious taste of the food to be selected while only 20% considered the quality nutrients of the food. It was also found that males considered the delicious taste of the food more than females. Besides, it was found that Thai people tend to consume more sugar and the food that was cooked by using starch and sugar. The data showed that the sugar consumption per one person during the past 2 decades has been increased 2.4 times, from 12.7 kg/person/year in 1983 to 30.5 kg/person/year in 2003 (Bureau of Policy and Strategy, Ministry of Public Health, 2005 : 123).

The consumption of food with high fat and carolers causes the important risk factors of cardio-vascular diseases of Thai people aged 35-39 years. It was found this age group of people have tendency to get high blood cholesterol, high blood sugar, overweight, and obesity. Among the people in Bangkok Metropolis, the highest prevalence rate of overweight and obesity was found in both males and females. The lowest prevalence of overweight and obesity was found in the Northern region. The

prevalence rate in the municipal areas was found to be higher than of the non municipal areas.

Nutritional situation of Thailand from 2001 to 2003 has a tendency to be increased from 12-30%, 12-88% and 13.42% respectively. (Department of Health, <http://www.nutrition.anamai.moph.go.th/newpage3.htm>). The consumption of variety of snacks was also increasing in accordance with the convenience of buying and types of variety of snacks the have been increasing more and more. The comparison study of the groups of smocks sole by the retailed shops and the groups of snack of the children's preference showed that the trend is in the same direction which was the group of crispy flour. The group of snacks lack of nutrients but causes dental health problems. It was found that dental health problems are going to increased. During the years 2000-2001 it was found that among 6 year old children who are going to enter the educational system, 87.4% had tooth decays of their milk teeth, with the average number of the teeth that were taken out or filling was 6.0 teeth/person which was higher that the average number found in 1984 whereby 71-6% had tooth decays of milk teeth and the average number of the teeth were taken out or filled was 4.9 teeth/person. During the years 1995-2001, the Department of Health carried out the dental health all provinces of Thailand, it was found that 6-15% of children aged 5-6 years did not have tooth decays and among the children aged 12 years old, the average number of the tooth decays that some teeth were taken out or filled was 1.6-2.0 teeth/person. Besides over consumption of snacks affected on economics. The study about the expense for buying snacks among primary school children showed that the children spent the money for snacks and toys averagely 13 Baht/day. If we assume that the cost of snacks for secondary school children is about 2 times of the primary school children, the amount of money spent by Thai children and adolescents will be 142, 357 million baht/year which is equal to the country budget for education (Bureau of Policy and Strategy) Ministry of Public Health, 2005 : 124-125).

In general, the trend of the nutrition status of preschool children in Thailand is going to be better. It was found that from the year 2001 to the year 2003 the malnutrition rate was decreased from 8.6% to 8.0% and 8.0% respectively. When the

consideration has been made by geographical region, it was found that the preschool students in the North-eastern region (10.53%, 9.93%, and 9.80% respectively) and in the Northern region (7.81%, 8.52%, and 8.49% respectively) had the higher rate of malnutrition than in other regions. For the Central Region, it was found that the malnutrition rate was decreasing (4.94%, 3.89% and 3.62% respectively) (Bureau of Policy and Strategy, Ministry of Public Health, 2005 : 124-236). According to the status of people in Bangkok Metropolis during the years 2003-2004 by the Nutrition Division, Department of Health, it was found that among the school age children aged 6-14 years, 19.9% were underweight and 4.5% were overweight, 32.8% consumed snacks and soda beverages almost every day and 26.0% consumed everyday. Regarding fast food 92.5% mentioned that they like it where as 92.5% consumed some days and 7.3% consumed it almost everyday or everyday. It can be said that children practiced improper diet which the proper measures for solving their innutritious food should be done urgently in order to prevent various diseases caused by overweight for example, obesity, diabetes mellitus, high blood cholesterol, high blood pressure, etc. Nutrition is the important foundation for health, if the people consumed nutritious diet they will get adequate and proper nutrients and be safe from those mentioned diseases (Nutrition Division, Health Department, 2004 : 97).

The report of the nutrition status of underweight children attending primary schools in Prachinburi Province showed that the overweight rate was higher than the country's goal (according to the goal of the eighth and the Ninth National Health Plan, the rate should not be higher than 7), and the trend was found to be increased during the years 1998 to 2000 (8.20%, 9.18% and 10.48% respectively). Even though, the decreased rate was found in the year 2001 (7.34%), but still higher than the national goal. This situation is the important problem that needs to be solved.

In Muang municipal area of Prachinburi Province, it was found that during the years 1998 to 2000, the percentages of underweight primary school children were : 14.9%, 16.65% and 10.8% respectively. But the overweight rate was found to be increased, 8.5%, 8.76% and 13.03% respectively.

The aforementioned data inspired the researcher be interested to the problem. Therefore, the researcher studied the consumption behavior of grade 6 students attending the Municipal School 3, Muang Municipal area, Prachinburi. The data were collected by interviewing the sampled of 31 boys girls in July 15, 2003. It was found that : the students like to consume sour, sweet, and hot food (29.0%, 22.6% and 22.6% respectively ; drink water less than 8 glasses per day (51.6%); consume all 3 meals (25.81%) ; have soda beverages regularly (74.2%) have tea and coffee, sometime (51.6%); consume semi-cooked food, for example, mama, yum yum, waiwai, regularly (54.8%); consuming cake, donut, pizza, hamburger, fried chicken, taffy, candy, candy, quid, etc. sometimes (54.8%); consume junk snacks regularly (83.9%) ; and regarding Body Mass Index, 67.7% had BMI<18.5 kg/m² (underweight) and 9.7% had BMI>29.9 kg/m² which were overweight.

From the above data, the researcher carried out the in-depth interview with 16 grade 6 students. It was found that : 6 students were found to be underweight, BMI<18.5 (37.5%) ; 4 students were overweight, BMI>29.9 (25.0%), most of the students know about 5 groups of food but they could not give the names of the food in all 5 groups completely. The data from the 24-hour-dietary survey of this group of students showed that 8 students did not consume all 5 groups of foods (50.0%). Seven of them consumed starch and sugar (43.75%) and 7 of them consumed 2 meals a day (43.75%) while breakfast was the meal that most of the sample missed, with the reason that the were hurry for schools, and 10 of then (62.5%) did not have dinner due to no hunger or too much playing and for get dinner time. The of them (62.5%) could not tell what kinds of diseases that may occur if they did not wash their hands effectively, 8 students (50.0%) could not wash their hands every time before eating and 4 students (25.0%) washed their hands by using only water. It was also found that 14 students (87.5%) have soda beverages regularly everyday; 10 students (62.5%) would like to have their lunch be more spicy (sour, salty, hot, sweet) and provided more alternatives; 10 students (62.5%) consumed junk snack regularly ; and 8 students 50.0%) like to have fried meat balls, ice cream, breads and crispy snack for lunch.

The researcher also interviewed school health educator and the teacher responsible for school lunch program, it was found that the school health service organized was at the “good” level, the school health examination was provided for students 1 time per semester accordingly to the school health examination record form, but no continuous follow-up activities have been done by the classroom teachers. Less participation of the students’ guardians in the school’s activities was found according to the meeting minutes of the school on the orientation day of the first school semester. It was found that most of the students’ guardians or laborers and did not have enough time neither recognize the importance of participating in the school’s activities because they may lose their income from leaving their job for that participation. The school has participated in the community’s activities with the nearby communities, Ruamjai community and Cienzue Community, on the various special national days, for example, Songkran festival, community campaign program for eradicating *Aedes Egypti* larva. This campaign was just only rally campaign but the school has not participated in solving community problems. Because, the school teachers suggested that the schools did not disseminate health information by using new methods for schools and students’ guardians as well as having health personnel be the resource persons for enhancing students health knowledge with the school in order to motivate students to have enthusiasm for practicing.

In order to forming health behavior in children and adolescents, besides the individual’s factors, the various environmental factors also affected the behavioral changes. This principle was agreed with the policy of the World Health Organization that proposed all countries to use health promotion as the main measure for solving health problems. This policy related to the coverage regarding target groups, target places including strategy, organizing health education activities and environmental supports that will be conducive for sustainable health behavioral changes.

Presently, health promoting school program had been implemented in various activities, for example, school lunch program with the responsibility of the school teacher health promotion program for students, surveillance programs of anemia due to iron deficiency, surveillance program of dental health, surveillance program of iodine deficiency. These surveillance programs were carried out by school

health teachers and public health personnel from Chacphaya-apai pubesr and Muang Municipality. The problems involving in the implementation of the health priming school program were : the school health teacher and the teacher responsible for school lunch program run this health promotion program without any participation of other school personnel; school students were not interested in the program ; and the students' guardians have not participated in the program at all.

From the above information, the researcher has applied participatory learning theory and the concept of social support in organizing a health education program aiming to change food consumption behaviors of grade 6 students in Municipal School 3, Muang Municipality, Prachinburi.

Research Question

Whether or not the health education program developed by applying participatory learning theory and social support will be effective in changing health behavior of students regarding knowledge of food consumption, attitudes toward food consumption and food consumption practices?

General Objective

To study the effectiveness of a health education program applying participatory learning theory and social support on changing behaviors of grade 6 students, Municipal school 3, Muang Municipality Prachinburi.

Specific Objective

To study the change of food consumption of grade 6 students, Municipal School 3, Muang Municipality, who participated in the health education program organized, with regards to the following aspects :

1. Knowledge about food consumption
2. Attitudes toward food consumption
3. Food consumption practices

Research Hypothesis

After the program, grade 6 students of Municipal School 3, Muang Municipality Prachinburi, who participated in the health education program applying participatory learning Theory and social support had changed their health behavior in the better direction, as regards to :

1. Knowledge about food consumption
2. Attitudes toward food consumption
3. Food consumption practices

Variables

1. Independent Variable : A health education program applying participatory learning theory an social support for changing food consumption behaviors of grade 3 students, Municipality School 3, Muang Municipality, Prachinburi.

2. Dependent Variables :

1. Knowledge about food consumption
2. Attitudes toward food consumption
3. Food consumption practices

Scope of the Research

This study was aimed to study the effectiveness of the health education program applying participatory learning theory and social support aiming to change

food consumption behavior of grade 6 students, Municipal School 3, Muang Prachinburi Municipality. The program was lasted for 10 weeks, starting from July 24, 2002–September 25, 2002.

Operational Definitions

1. Health Education Program : the systematic management of learning activities by applying participatory learning theory and social support. This health education program was developed by the researcher aiming to help the sampled students gain knowledge, exchange experiences, and change their knowledge about food consumption, attitudes toward food consumption and food consumption practices. The activities organized were educational activities aiming to enhance students knowledge through lecture, group interaction activities, measuring body weight and height and comparing the outcomes with the standard graph of the public health personnel. The activities were organized by the researcher with school health teachers and public health personnel.

2. Health Food Consumption Behavior : the balanced consumption of 5 groups of food which included meats, egg, dried beans, milk, rice, starch, sugar, taro, green-leaf vegetables, various types of fruits, fat from animals and plants, avoiding replacing main course with junk snacks, buying clean and safe food, and not contaminated food, avoiding consuming too spicy and colorful foods.

3. Knowledge About Food Consumption : remembering and understanding the five groups of foods, selecting to buy safe, clean and not contaminated foods, the importance of the main meals. This variable was assessed by using questionnaire.

4. Attitudes Toward Food Consumption : the summation of beliefs, feelings and readiness to practice healthy food consumption behaviors. This variable was measured by using questionnaire.

CHAPTER 2

LITERATURE REVIEW

This study was the application of participatory theory and social support aiming to change food consumption behavior of grade 6 students, Municipal School 3, Prachinburi Muang Municipality. The literature review has been done by studying concepts, theories and related researches in order to be used as the guideline for organizing various activities. The outcomes of literature review are presented in the following section, with the following outline :

- Part 1 General Information of the Municipal School 3, Muang Municipality
- Part 2 Knowledge Regarding Food Consumption
 - 2.1 Safe food
 - 2.2 Nutrition Commandment
 - 2.3 Factors affecting/influencing food consumption
- Part 3 Related Concept and Theories
 - 3.1 Participatory learning
 - 3.2 Social support
- Part 4 Related Researches
 - 4.1 Researches related to food consumption
 - 4.2 Researches related to participatory
 - 4.3 Researches related to social support

Part 1 General Information of the Municipal School 3, Muang Municipality

1.1 Location

The Municipal School 3 located at number 372/1, Prachinburi street, Namuang subdistrict, Muang Prachinburi District Prachinburi Province. The school was under the management Educational Office, Muang Prachinburi Municipality. The school organized the teaching and learning programs from kindergarten to grade 6. The area of the school was about 1 Rai, 2 Ngarns and 49 square wa, with 2 buildings for and 1 buildings for students' classes cafeteria.

The school connected with the following places :

Northern part : Prachintakan Street

Southern part : Kaewpijitra Temple

Eastern part : Bangboriboon Subdistrict

Western part : Cienzue community

1.2 History of the School

The Municipal School 3, Wad Kaewpijitra offers the educational programs, starting from grade 1 to grade 6, by using the hall of wad kaewpijitra as the classrooms with the support of the head monk. In 1994, the school received the financial support by the Department of Management, Ministry of Interior, to build the new building for the old one. This new 3 store building consisted of 12 classrooms. At present, there are 2 buildings.

The Municipal School 3, Wad Kaewpijitra located in the central area of the urban community. The nearby areas are the Buddhist temple (Wad) and grocery stores. It is a congested area (slum). Most of the students' guardians earned their living in trading and laboring. Their economic status was between "moderate-poor". There are some students resided outside the Muang Municipality, therefore the living conditions of the school students are different as well as physical and mental health.

Some of the school students have to be supported, cared, and provided services in order to serve the needs of the students, students' guardians and the community. It was also expected that after the students finished grade 6 they can connected and be transferred to the net-working secondary schools under the management Mugng Prachinburi Municipality, in order to furthering their study.

1.3 School Environment

Cafeteria. School lunch program has been managed by the school teacher who was responsible for the school lunch program, whereas the menu has been set including preparing the foods for all school students.

There was one big bin for garbage disposal of the school placed mean the cafeteria, with the cover, but the bin was damaged, it was not in the good condition. There was no separated bin for garbage and refuse. The drainage system of the school was not proper, there was a flood of the water way for drainage at the back of the cafeteria. The water way of the waste water was obstructed with the food refuse. There was no grease trapper from the cooking place. The place for hand washing of students located at the back of the school building which was quite for from the cafeteria whereby no cleaning materials were not available, for example, soap, or garbage can.

The school cooperative sold junk foods that are not good for dental health, for example, ice cream, soda beverages, junk snacks, etc. at the shop at the front of the school and at the shop outside the school. The foods sold were fried meat balls, candy, etc.

Only the teacher who was responsible for the school lunch program took care of school students' food consumption without any participation from other school staff.

Most of the students' guardians were low skill laborers who had less participation in the school's activities due to no available time and less awareness of the significance of participation in the school's activities. If they came to participate in the school's program they may lose their income.

Regarding the students, it seemed that students were not interested in the health programs of the school even though those programs were done for their own health. Although the physical check up was done accordingly with the school health record once a semester but no continuous following-up has been done by the classroom teachers.

For the participation from the community, it was found that the school has participated in the nearby communities' activities, Ruamjai and Ciemzue Community, in various important traditional ceremonies, for example, Water Festival, Campaign for Eradication Aedes Aegypti Larva. The school has participated in the campaign by walking with the community people but did not participate in every phases of the program including helping solve the problems of the community.

According to the suggestions made by the school teachers, because the lack of using new teaching methods for disseminating health information to students and students' guardians therefore the public health personnel should be invited to be the resource person in teaching health education in order to motivate students to be enthusiastic to practice proper health behaviors.

Part 2 Knowledge Regarding Food Consumption

2.1 Safe food (<http://www.heathymanual.com/food.asp?content.id=31>)

Method for Selecting Fresh Food

Fresh food had high value of nutrients and higher quality. Methods for selecting fresh foods can be done by observing the following characteristics for each type of foods:

Pork : The characteristics of good pork are : light pink color, oily, no rancid odor, no sign of the cyst in the meet, the color of the fatty part is cloudy-white.

Beef : The characteristics of good beef are fresh-red color, the surface is not dented when pressing, no bad smell, not being mucous, and no cyst.

Fish : The characteristics of good/ fresh sea and fresh water fish : red gills, tightly closed gills, fresh eye crucible, no bad odor, the skin looks oily with thin mucous membrane covering the whole body, it scale touched tightly with its skin, no intestines out, the meet touched tightly with the bones, the skin is not dented when pressing hardly.

Shrimp: The fresh shrimp should have : the head touched tightly with the body, fresh eyes, fresh color as the natural color, dense and hard meat, fresh sheath, visible red fatty part, and no bad smell. But for the afresh shrimp, the head failed off with ad odor.

Shell : The fresh shell will have closed mouth when touched it but its mouth will be open when leave it for a period of time. Its sheath does not have mucus or dirt with no smell.

Poultry : The good poultry should have no with skin or green spots especially at under wings, legs or throat should not have dark color, should have fresh eyes and not bad-smelling.

Egg : The sheath should be clean with no dirt's, no damages, not cracked (micro-organism can penetrate into the cracked egg), creamy white color, no black spot or big when look through the light, will sink if put it in the salted water with the proportion of 1 liter of water per 100 gram of salt.

Consumption of Canned Food

1. In selecting canned foods, the following characteristics should be considered seriously : good and smooth condition of the cover and the bottom of the can ; damaged or swelling can caused by inside gas due to spoiled food ; no rust or leaked part on the can.

2. When opening the can there is no pressure out from the can and food product should have natural smell, taste and color, no sour smell, no bubble or other abnormal conditions found.

3. Do not eat the food from the damaged or the abnormal can.

4. The food containers, for example, glasses, plastic, etc. should not be damaged or cracked.

5. Having food label telling the detailed information of nutrition facts, expired date and address of the manufactures.

6. Don't heat the food without taking the food from the can because chemical substance coated the can be melted mixed with the food.

How to read the Produced and Expired Dates

The food productions that the consumer selected for consumption or for favoring or for mixing with other ingredients for preparing food, have different days of maintaining for a good quality or standard, or example, canned foods, oil, fat, fish sauce, etc. can be able to keep for 90 days. At the food label, the production date will be indicated, e.g. January 40 or using the code like 01-40 or the expired date may be indicated or the latest data that the food should be consumed, e.g. expired date : May 10, 40 or should not be consumed before 01-05-40, etc. according to the law past eared milk products have to be kept in the refrigerator at the temperature not higher than 8°C and at the label there will be only the expired date.

Besides for the food products for infants and babies, not only the date of production must be specified on the label but also the date of expiry, for example, fortified milk for infants, supplement food for infants and babies.

The Substances that were Inhibited

To Be Added in Food

The following 7 substances are prohibited to be imported or be produced :

1. Para-Phenetolecarbamide which is a sugar substitute (the common name is dulzi).
2. Cyclonic acid and sodium chloride of cyclamic acid
3. A.F. 2 or the common name is furylframide.
4. Potassiumbromate
5. The food that contains dulzin, A.F.2 or cyclonic acid or sodium carbonate of cyclonic acid (sodium cyclamate).
6. The food that contains demimonde or succinicacid 2, 2-dimethylhydracide or the trade name of "alar".
7., except for export

Twelve compounds that are inhibited to be sued in foods are as follows :

1. Vegetable oil that was processed by adding bromine
2. Salicylic acid
3. Boric acid
4. Boras
5. Calcium iodate or Potassiumiodate, except using for preventing and treatment of goiter.
6. Nitrofurazone
7. Formaldehyde, dissolved formaldehyde
8. Potassiumchlorate
9. Kumarin
10. Dihydrokumarin or Benzodihy dropirone
11. Methylalcohol or methanol (except for using as a processing aid.
12. Diethyleneglaicl or dihydroxydiethyle there.

Risks of Colorful Foods

Adding colors to foods makes the foods look good to be consumed. But one thing that we forget is the use of color for hiding some bad things of that food. If the adding color is the natural color or the safe color for eating, the color of the food will be lighter or faded out rapidly. Therefore, the greedy food-producers usually use dye instead of the natural one order to make the color lasts longer. Dyes can not only cause tumor or cancer of the digestive system and bladder but the heavy metals in dyes, for example, leads, arsenic, etc. are dangerous for the consumers. Lead is poisonous to the nervous system, in case of acute receiving, the consumer may die within 1-2 days. But in the chronic case, the lead can make the gum turned dark purple, loss strength of extremities, paralysis, abnormality of digestive tract system, nausea, vomiting, and some signs of the nervous system and seizure may also be found. For arsenic, when enters into the body, it will accumulate in muscles, bones, and skins and other parts of the body including kidney. The sign found are fatigue, muscles have less strength, abnormal condition of digestive system and anemia. If the person receives the high quantity of arsenic at only one time it will lead to a Toxic conditions to the body by having burned mouth and sinuses, dried, abnormality of digestive system, tensioned muscles, loss of consciousness. Besides the patient may have swelling face and swelling of the skin under the eyes.

If the large amount of food colors has been used though the colors used are the permitted colors and the colorful foods have been consumed regularly, it may cause tumor or cancer or the accumulated heavy metals cause toxic condition.

Preservatives

Preservatives or food additives are the chemical substances that prolong the time for keeping the food from being spoiled because they help to delay or stop the growth and destroy microorganisms that are the causes of spoiling food. The preservatives that are mostly used are the mild acidity substances, for example, benzoic acid and sodium benzoate since this substance is cheap and does not change the taste of the food. This substance is usually added to beverages, for

example, fruit juice, sauce, pickles, jam, jelly, sweetened fruits, and ready-to-cook curry paste. For prop ionic acid and propionate are appropriate for preventing the growth of fungi and prevention of mucus formation in a dough. Therefore preservatives are used most for preparing bakery, cake and various type of cheese. For citric acid, which is the substance, can be used to prevent the growth of yeast and bacteria so it is usually added in beverages, soda beverages, jelly, jam, etc.

Only the limited amount of preservatives and food additives should be used that can serve the objective set. It should not be added too much because the consumers will get over amount of the substance. Therefore, according to the Declaration of the Ministry of Public Health, the preservatives are inhibited to be used with the foods that, it is not necessary to add any preservatives, which are the canned foods that have been already pasteurized. For other kinds of foods, the attention must be paid on the label that specified the preservatives added.

Dangers from Borax

The purpose of adding borax in the food was for commercial purpose. Borax will help the food looks fresh and be crispy for a longer period of time. But if the individuals consume borax regularly it will be dangerous to the body. The toxin from borax will affect the whole body of the consumers. The severity of the effect of borax depends on the intensity of the borax intake and the accumulation of the borax in specific organ, especially kidney. Kidney is the organ that has been affected mostly. The symptom occur within one week stomach and intestines will be infected and the liver will be damaged, swelling of the brain including blood congestion in the brain. The general symptoms are high fever, cracked shins and be swelling like burning from the boiled water. The patients may have less urination or inability to produce urine due to kidney failure.

In adults, receiving borax 15-30 grams may lead to death. According to the announcement of the Ministry of Public Health, Number 151, the manufacturers or individual who sell foods adding borax will be imprisoned not longer than 2 years or the fine of not more than 20,000 Bahts or both (information from Dr.Pakdee Pothisiri, Deputy Permanent Secretary of the Ministry of Public Health)

Using the used Cooking oil Leads to Death Due to Cancer

The cooking oil that has been used repeatedly will contain the low quality in regards to color, smell, taste and higher viscosity. The important thing is the formation of “Polar Compound” that can be accumulate in the body which affects the cell’s function. The data from the study in experimental animals showed that some substances left from the degeneration of the oil from frying are the substances that cause skin cancer in the experimental animals. There are also some substances from repeated frying can cause tumor of kidney and lung and cancer in the experimental white rats.

Recommendations for Using Cooking Oil

1. For frying the foods that needs higher temperature, it was recommended to use the oil that contains high saturation, for example, olefin palm oil (from fish). For the frying that needs not too high temperature on other type of cooking, the recommended cooking oils are soy bean oil, corn oil, sunflower seed oil, safflower oil, etc.
2. Before frying, the outer part of the raw food should be dried in order to lower the breaking down of the oil that will lead to the delay of the degeneration of the oil.
3. The skillet or other utensils used for frying should be clean everyday because the left-over used oil will activate the degeneration of the new oil.
4. The new oil should be used but do not add the new oil into the old one if the old one has the following condition : black, thick and cloudy, smelling bad, have some bubbles or smoking.
5. Do not put too much of the raw food for each time of frying, do not use too high temperature and keep the constant temperature while frying. If frying the meet that salt or spicy has been added, the oil should be changed more frequently and the left-over meet in the oil should be filtered.

Food Poisoning—From the microorganisms

For poisoning and diarrhea are the illness that mostly found of Thailand which are caused by food preparation, storing and improper habits of the

food handlers and consumers. The food that are contaminated with microorganisms will cause sickness in the consumers.

Symptoms of Food Poisoning

Generally, the symptoms of food poisoning caused by organisms are the abnormality of the gastro-intestinal tract, for example, abdominal pain, abdominal discomfort, nausea, vomiting and diarrhea. The severity and acute symptoms depend on the quantity and types of organism or toxic substances in that food.

Recommendations for Safe Food Consumption

1. Cleaning hands every time before handling foods, during preparation, after using the toilet. Cleaning all cooking utensils and the kitchen.
2. Separating raw food from the cooked food because organisms can be contaminated in the cooked food, from the raw food, while preparing or storing food.
3. Making the food cooked thoroughly by using the temperature not less than 70°C.
4. Storing the food in the appropriate temperature by keeping the cooked food in the temperature not less than 5°C or not higher than 60°C and do not keep the cooked food in the room temperature longer than 2 hours. For raw foods, for example, vegetables, fruits, etc. should be kept in the temperature not higher than 4°C.
5. Using clean water and safe raw food in cooking and using the quality raw food.
6. In selecting foods, buy only ready to eat foods from clean shop and hygienic outlets. Foods should be kept in clean covered containers, and use hygienic utensils to handle foods. The food handlers should wear aprons and hair nets, for preventing dirt that might be dropped in the foods. The consumers should heat the ready-to-eat foods before eating.

2.2 The Nine Rules of Dietary – Intake (Working Group on Food Based Dietary Guideline for Thai)

Rule # 1 Eat a Variety of Foods from Each of the 5 Food Groups and Maintain Proper Weight

1.1 Eat a Variety of Food Each of the 5 Food Groups

To obtain all of the essential nutrients in adequate quantities as required by your body, you need to eat a variety of foods from each of the five main food groups. If some of these foods are not consumed, or others are eaten repeatedly on a daily basis, you are likely to receive too few, or even too much of, certain nutrients.

Each type of food is composed of many nutrients such as protein, carbohydrate, fat, minerals, vitamins, water as well as dietary fiber, which helps the body function properly. The nutrient content in different types of foods often varies. Hence, no single food can supply all of the nutrients in their proper amounts that your body requires. The 5 major food groups include :

Group 1 : Milk, eggs, meat, legumes and sesame seeds for contributing to growth and maintenance of body tissues

Group 2 : Rice, cereals, starchy foods sugar for providing energy :

Group 3 : Vegetables for assisting regular body functions

Group 4 : Fruits same function as group 3

Group 5 : Oils fats from plants and animals for providing energy and body warmth.

We should therefore eat a variety of foods from each of the 5 food groups, and in appropriate amounts, in order to obtain all the nutrients that the body needs and eventually achieve good nutrition status.

1.2 Maintain Proper Weight

“Body weight” is an important indicator of each person’s health status. Each individual should maintain a proper weight for age and height, and it is necessary that we maintain our proper weight by eating good food along with regular and appropriate exercise.

In general, underweight persons tend to be weak, they become sick easily, and they cannot perform efficiently while working or studying. In contrast, overweight persons are at risk of coronary heart disease (which is leading cause of death in the country), diabetes mellitus, hypertension, and certain types of cancer.

In order to have a healthy and long life, a good dietary intake and appropriate exercise should be adopted.

You can determine your correct body weight in several different ways. The easiest and best methods are as follows.

Children : using weight for age or weight for height as compared to the reference standard.

Adult : using Mass Index (BMI)

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m}^2\text{)}}$$

A person with a desirable weight should have BMI between 18.5-24.9 kg/m²

under weight BMI less than 18.5 kg/m²

over weight BMI range 25-29.9 kg/m²

obesity BMI more than 30 kg/m²

To maintain a proper body weight, appropriate exercise should be carried out regularly, at least 3 to 5 times per week. Each exercise workout should last for 20-30 minutes in order to strengthen the body and heart muscles as well as improve blood circulation. More importantly, tension and stress will also be alleviated.

Everyone should maintain his or her own proper weight. It is suggested that each person should check his or her weight once a month. If one's weight is low, he/she should eat higher quantities of nutritious foods. If one gains weight, he/she should reduce the quantity of certain foods especially, fat and sugar. Moreover, he/she should undertake a regular exercise program

Rule # 2 Eat adequate amount of rice or alternative carbohydrate sources

Rice, a source of energy, is the staple food of the Thai people. The main nutrients in rice are carbohydrate and protein. Unpolished rice or home pounded rice is more nutritious than highly milled rice (polished rice) because it contains substantial nutrients such as, protein, fat, dietary fiber, minerals and vitamins. \

There are several rice and cereal products which can also be sources of energy, for example, rice noodles, fermented rice noodles, and wheat noodles. These often served as Thai “fast foods” In many, they are more nutritious than Western fast foods, because Thai fast foods also provide more dietary fiber from vegetables.

Rice and starchy foods should be consumed daily and in appropriate quantities. If they are eaten in excess of what the body requires, they can transform into fat the is deposited in the body’s internal organs, thus leading to obesity. They should be eaten along with a variety of other foods from the 5 food groups in amounts proportionate and adequate to your body’s requirements.

Rule # 3 Eat plenty of vegetables and fruits regularly

Vegetables and fruits are good sources of vitamins, minerals and other useful substances, which are necessary for good health. Fiber in vegetables and fruits helps the body to remove waste as well as eliminating cholesterol and some carcinogenic compounds.

Vegetables and fruits are generally low in calories. As a result, eating a wide variety of vegetables and fruits on a regular basis is one way to reduce the risk of obesity and coronary disease. Recent research also shows that beta-carotene and vitamin c in vegetables and fruits can prevent fat from depositing in blood vessels and also reduce the risk of some types of cancer Thailand is fortunate in having a wide selection of vegetables and fruits available throughout the year. They can therefore become a regular part of the Thai diet, and especially the diets of school children and adolescents in order to keep them growing strong and healthy.

There are numerous kinds of vegetables. They are classified according to the parts of the plant which are edible, such as leaves and stems (swamp cabbage, ivy gourd, lotus stem, bracken, water fern); flowers (cauliflower, sesbania flower); fruits (pumpkin, sponge gourd, yard-long bean, egg plants); and roots (radish, carrot, ginger, turmeric). Green-leafy vegetables contain vitamin C, beta-carotene, minerals and dietary fiber.

Fruits can be eaten both ripe and unripe, giving either sweet or sour taste. Fresh fruits are rich sources of vitamin C (e.g., guava, green mango, rose apple, banana, pineapple, orange, and Pamela). Some fruits are eaten ripe and are rich sources of beta-carotene (e.g., papaya, ripe mango). An overweight person should avoid and/or limit fruits that are very sweet and high in sugar content such as durian, sapodilla, long an and jackfruit

Therefore, it is suggested that everyone a variety of vegetables during every meal, take fruits regularly, and especially after meals or as a snack. In addition, they should be eaten according to their seasonal availability

Rule # 4 Eat fish, lean meat, eggs, legumes and pulses regularly

Fish lean meat, eggs, legumes and pulses are good sources of protein. We need good quality protein in sufficient amounts for the growth, function and maintenance of the body. Protein is also needed to improve immune response and supply energy. Some important sources of protein include the following.

Fish contains good quality protein is easily digested and low in fat. Eating fish, instead of red meat, regularly helps reduce cholesterol. Fish also contains high amount of phosphorus. Small fish canned fish which can be eaten whole are good sources of calcium for strong bones and teeth. In addition, marine fish are good sources of iodine for the prevention of iodine deficiency disorders.

Lean meat of all types is a good source of protein. Eating lean meat on a regular basis not only provides a sufficient source of protein, but also reduces fat accumulation in blood vessels and the body as a whole. Frequent consumption of

meat that has visible fat should be avoided. More over, there is substantial invisible fat in meat, especially pork, which has more fat than any other meat.

Eggs are a major source of protein. They contain several essential minerals and vitamins which are useful to the body. Moreover, eggs economical, can easily be cooked and eaten. Children should eat one egg a day while normal adults should eat 2 to 3 eggs per week Most importantly, eggs must be well cooked. Eggs from both ducks and chickens are equal in terms of their nutritive value.

Legumes and Pulses are good sources of protein. They are inexpensive and commonly available. There is a variety of legumes and pulses, for example, soybean, mung bean, black bean, rice bean, and peanut, including their products such as bean curd (tofu), fermented soybeans, soybean milk and food items (such as desserts) made from legumes and pulses. They can be regularly eaten as an alternative protein source to meat. Furthermore, they are also a source of energy.

Sesame seeds are a useful food containing protein, fat, vitamins (especially vitamin E) and calcium. They can therefore be eaten regularly.

Rule # 5 Drink milk in appropriate quality and quantity for one's age

Milk is good for everyone. It is rich in calcium and phosphorus which are essential for building strong bones and teeth. Moreover, milk contains protein, lactose, and vitamins (especially vitamin B2), which promotes growth and proper functioning of body tissues. There are many kinds of milk fresh milk and flavored milk which are of similar nutritional value.

Pregnant women, school children, adolescents, adults and the elderly should drink 1 to 2 glasses milk each day. They should drink milk along with adequate exercise in order to strengthen the bones and decrease bone resumption.

Before buying milk, check the expiry date and choose only intact containers. Some kinds of milk such as pasteurized milk or yoghurt must be kept in the refrigerator at a temperature not higher than 10°C.

Milk that should be avoided includes expired milk, milk that has not been through any heat treatments to destroy microorganisms, milk kept in damaged containers, or pasteurized milk that is not kept in the refrigerator. Once the container is opened, the milk should be consumed immediately. If not, keep it in a clean and closed container under refrigeration. For drinking yoghurt, read the label and choose the brand that is rich in fresh milk in order to get a nutritive value similar to that of fresh milk. Those who are lactose maldigester and intolerance which may have gastrointestinal symptoms diarrhea or abdominal bloating. They should start drinking milk in small amounts (e.g., ¼ glass) and thereafter gradually increase the serving, drink milk after a meal or switch to soy cream yoghurt. Yoghurt contains bacteria that are beneficial to human and can help digest the lactose in milk. Soy milk is a soybean product that provides protein vitamins and minerals which are useful to the body. Regular intake of soy milk is also advised.

Rule # 6 Eat a diet containing appropriate amounts of fat

Fats are essential foods for health, supplying energy and warmth. Almost every kind of food contains fat in different amounts. Oils and fats from plants and animals are concentrated energy sources. Moreover, fat provides essential fatty acids and is a carrier for fat soluble vitamins A, D, E and K.

Thai people are consuming more fat today than they did in the past, and there is a growing tendency that they will consume even more fat as time passes. People are thus likely to gain weight, become obese and place themselves at risk of degenerative diseases. One strong recommendation is to limit energy from fat to not more than 30% of total energy intake per day.

There are tow kinds of fat :- saturated fat and unsaturated fat. Consuming too much saturated fat and cholesterol will increase cholesterol levels in blood leading to a greater risk of cardiovascular disease. To prevent this, saturated fat and cholesterol should be limited.

Rule # 7 Aroid Sweet and Salty Food

7.1 Eating foods with sharp and strong taste can have fewer health benefits, especially if they include salty and sweet foods.

7.2 Most foods that are eaten on a daily basis, either as a main dish or dessert, contain sugar. We also take additional sugar from soft drinks, candy, toffee, jelly, syrup and sugar added to tea, coffee, and other beverages. One should obtain no more than 10% of his/her total food energy from sugar. The daily intake should not be more than 40-55 grams or 3-4 tablespoons per day-because the energy from the extra sugar intake will be accumulated in our body and will cause obesity.

7.3 Sodium salt or cooking salt is the substance that adds salty taste to the foods, for example, fish sauce, soybean sauce and salt that used as preservatives in fermented foods such as pickled vegetables, salted fish, fermented fish, as well as snack foods, bakery products. Salt intake more than 6 grams per day or more than 1 teaspoonful places a person a risk of hypertension. Therefore, flavorings should not be added to our foods if it is not necessary.

Rule # 8 Eat Clean and Safe Food

Living in a rapidly changing society brings about changes in food practices and behaviors from cooking the family meal at home to buying ready-to-eat, already cooked or ready-to-cook foods. These foods may be contaminated or unclean and can lead to food poisoning and other gastrointestinal diseases.

We should consume foods that produced from reputable in situations. Fruits and vegetables should be washed thoroughly before eating. In selecting foods, buy only ready-to-eat food from clean shops and hygienic outlets, freshly prepared foods. Food should be kept in clean covered containers, and use hygienic utensils to handle food. Before eating, hands should be washed with soap and after using toilets, washing hands with soap is a required personal hygienic practice. If the same food is being shared with others, do not use a person's spoon to take food from the dish but use the spoon provided for that particular food.

Rule # 9 Avoid or reduce the consumption of alcoholic beverages

The trend towards consuming alcoholic beverages among the Thai is increasing along with the incidences of non-communicable diseases relating to this practice i.e. high mortality rates from traffic accidents.

Alcoholic beverages include spirits, beer wine, brandy and any types of beverages containing alcohol. Regular consumption of alcoholic beverages is harmful to health and can to a substantial loss of life and property. For example, hypertension and cirrhosis of the liver pose high health risks. Regular intake of incidence drinks can damage liver cells and the incidence is as much as 7 times higher than those who do not drink. Peptic or duodenal and esophageal cancer are also additional health risks. Most alcoholics are likely to get cirrhosis of liver and infectious diseases such as pneumonia and tuberculosis. Those who drink only alcohol and take no food at risk of nutritional deficiencies. In contrast, those who drink and consume food rich in protein and fat, likely to become obese and are at risk of developing other related diseases. Alcohol affects the central nervous system (CNS) and depresses the brain centers that control the heart and consciousness. It leads to impaired judgment, a disturbed sense of balance and decreased work capacity resulting in carelessness. Finally, money is spent unwisely with alcoholic drinks and the family as a whole will become discontent.

As a result, the regular consumption of alcoholic drinks should be reduced, if not avoided altogether. Those who drink alcoholic beverages occasionally or are beginners should avoid alcoholic drinks as much as possible. Most importantly, under no circumstances should one drink alcohol and drive

2.3 Factors affecting/influencing food consumption

(Nutrition Division, 1998 : 55-79)

2.3.1 Economic Factors. These factors are concerned with economic system, marketing system, and price of food, technological progress regarding production, and communication that distribution of information to the consumers. The

consumers are the victims of propaganda about foods through various types of media, for example, radio, television, etc. This condition along with the socio-economic condition of the family whereby the progress and development of industry affected the increased rate of employment which leads to the increased income of the people. They usually are interested in buying the expensive foods which created the new value and new taste regarding food consumption.

2.3.2 Social Cultural and Traditional Factors. These factors are concerned with education. If the family leader or house wife has better education and has proper understanding about food consumption, they usually select the nutritious foods for their family members. Besides they will educate and develop their children healthy food consumption behaviors. The change of Thai society from rural condition to urbanization helps create the imitation of food consumption behavior. The pattern of seeking has been changed to buying for consumption. Eating behavior is an inheritable culture that had occurred for a long period of time therefore, it is difficult to be changed. It needs time and the appropriate measure to make the new behavior be embedded in the lifestyles of the people. For example, the food consumption behavior of the rural people in the North-eastern part where as a pregnant woman in some area does not eat egg due to the belief that when she is in labor she will have a lot of pain and she will scream very loud like the sound of a hen laying eggs. However, the western culture affected the food consumption behavior of the rural people in the North-eastern part where an a pregnant woman in some area does not eat egg due to the belief that when she is in labor she will have a lot of pain and she will scream very loud like the sound of a hen laying eggs. However, the western culture affected the food consumption behavior of the new generation regarding fast food consumption even though it is very expensive.

2.3.3 Individual's Factors. These factors concerned with many conditions, for example, health status of the individual. If a person received adequate and balanced diet but if digestion and absorption of the digestive system are not good that person may have malnutrition. The factors that will cause the abnormality of getting adequate and nutrition's food are, for example, when a person had high fever, the body will need more food; for prating hard exercise, the

body will need more energy and more nutrients, during pregnancy and lactation, a woman needs more nutritious food, etc. The factors that affect the food absorption of the body are, for example, heredity diseases cause the body not be able to absorb some types of food ; disease of digestive system causes nausea, vomiting ; liver disease may result in the decreased secretion of bile, etc. Some factors affect the body metabolism of the foods, for example, dysfunction of liver affects the metabolism of carbohydrate, etc. The factors affect the dispelling some nutrients, for example, during lactation caused the excretion of water (fluid and nutrients through breast milk, etc.

Part 3 Related Concept and Theories

3.1 Participatory Learning (Department of Mental Health, Ministry of Public Health, 2001 : 13)

Participatory learning is the learner centered learning. It composes of 2 basic learning's:

1. Experiential Learning
2. Group Process

1. Experiential Learning. It is the type of learning that was aimed to help the learner develops knowledge from experiences. There are 5 important characteristics of experiential learning as follows:

- 1.1 It depends on the learner's experiences.
- 1.2 The learning that created new challenging and active learning continuously. The learner has to involve in the activities all the time, not only listen to the lecture.
- 1.3 There is an interaction among the learners themselves and the teacher.
- 1.4 There is as interaction that creates the expansion of the knowledge of each learner.

1.5 It needs variety of communication channels, for example, speaking, writing, drawing, role playing, etc. which are conducive to the exchange, analysis, and synthesis of learning.

The Components of Experiential Learning. (Department of Mental Health, Ministry of Public Health, 2000 : 14-16)

Kolb indicates 4 important components of experimental learning which help develop an effective learning, as follows:

1. Experience. The teacher helps he learners bring out their own experiences for their learning and share with other learners who may or may not have the same experiences.

2. Reflection and Discussion. The important components that will help the learners express their opinions and feelings

3. Concept. The concept derived from the cognitive process. It can be developed through many means, for example, lecture by the teacher, reading assignment, and discussion during the second component. The learner may conclude the concepts derived from the discussion and the group presentation. The conceptualization process will help the learners under stand thoroughly about the contents and will lead to the change of attitudes as well as the understanding the contents and steps for performing various skill.

4. Experimentation/Application. The learners apply the learning to the new situation and develop the new guideline for furthering actions.

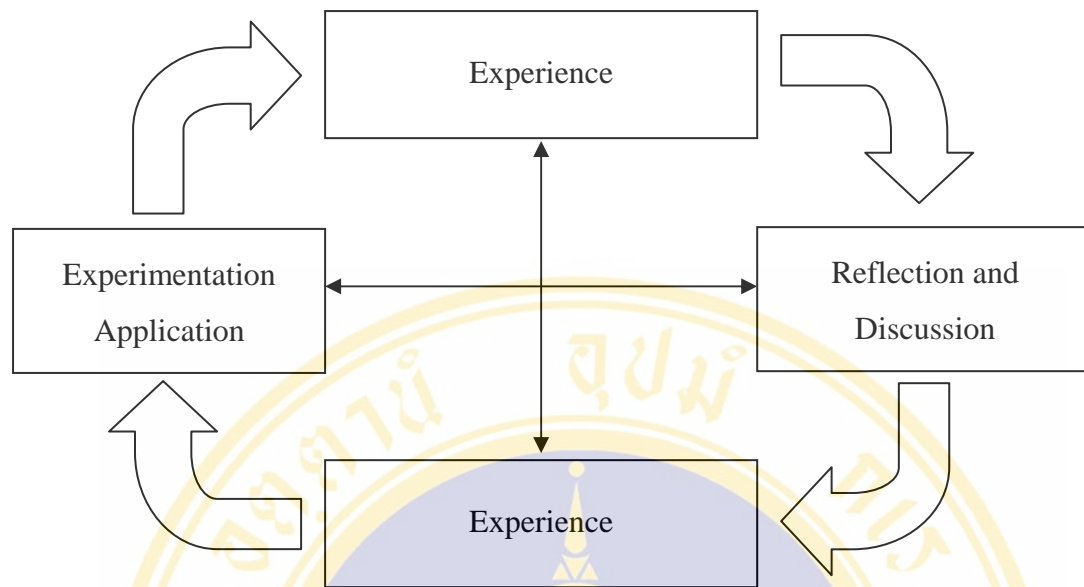


Figure 1 Components of the experiential learning

(Department of Mental Health, Ministry of Public Health, 2000 : 14)

These component of experiential learning have the dynamic relearning have the dynamic relation with each other components. The teacher may start the process at any point, usually starting at the inexperience component or concept component. These two components can help the learners bring out their old data or receive the new data for discussion and application. The time duration used for implementing activities in each component is not the same but the important thing is learning and teaching activities must be organized in each component.

2. Group Process. (Department of Mental Health, Ministry of Public Health, 2000 : 16)

Learning through group process is an important basic learning. When this type of learning exists with the experiential learning, it will help the learner achieve maximal learning.

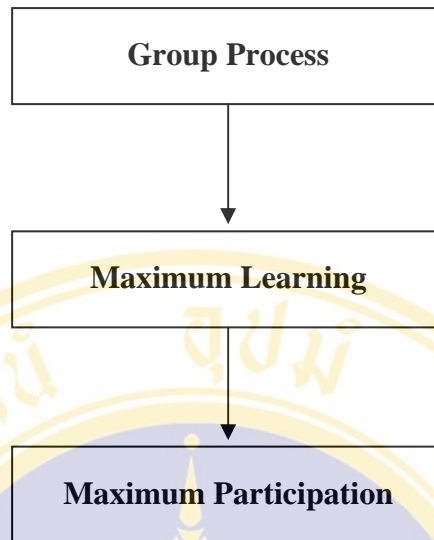


Figure 2 Group process

(Department of Mental Health, Ministry of Public Health, 2000 : 16)

Maximum participation of the learners depends largely on the group design which may be composed of small number with 2 and larger number. Each type of groups has both advantages and disadvantages. All students should participate in every activity of each learning component (Department of Mental Health, Ministry of Public Health, 2000 : 17). The diversity of group designs developed by the teacher will help the learners participated in the activities in accordance with each type of group design. Participating in group activities will help the learners express their opinion, exchange opinions, be active in the learning process all the time, be alert and be interested in the learning continuously (Department of Mental Health, Ministry of Public Health, 2000 : 19). Therefore, the teacher should consider and select the appropriate group design that suitable for the learners and the activities in each learning component.

Maximum Performance. Even though the teacher has designed the group type that have all members participated in the activities, the important thing that will help the learners reach the maximum performance is the group design the teacher has to develop the Task sheet that indicates the activities that the learners have to do in order to reach learning objectives in the lesson plan (Department of the Murtal

Health, Ministry of Public Health, 2000 : 17). Three important components for setting the tasks are as follows :

1. Identify the activities clearly regarding how the members will be grouped, for what objectives, and for how long.
2. Identifying the roles of group members clearly.
3. Identifying the task structure clearly with the details of each activity and members' roles. It is the schedule that the teacher informs that learners, in the forms of "Task Sheet" or "Description Sheet".

3.1 Task Sheet. It is the clear statement that detailers of procedures aiming to help the group members perform the tasks in each group designer, small group or brain-storming group, etc., and can be able to achieve the group's objectives. The "Task Sheet" has been used mostly in the "Reflection / Discussion" and "Experimentation / Application" components. This "Task Sheet" is very useful for helping the learners achieve the tasks within the limited time and serve the group's objectives.

3.2 Description Sheet. It is the explanation regarding performing the group's activities roughly. So there is no need to develop the "Task Sheet". Black board or transparency can be used by the teacher for presentation this description. This type of sheet has been used mostly in the "Experience" and "Application" components.

Principles of Teaching Knowledge Through Participatory Learning

In order to teach knowledge by using all 4 components of participatory learning, the activities can be organized as follows :

Table 1 A plan for teaching knowledge through participatory learning

Components of Participatory Learning	Specific Characteristics of Participatory Knowledge teaching
Experience	Teacher asked the questions by using the “Description sheet”, to have learners presented or exchanged experiences.
Reflection and Discussion	Dividing the learners into groups, and have them performed the activities in accordance with the “Task Sheet” which was to discuss accordingly with the topics and the allowed time and group presentation will be followed
Concept	The teacher made the conclusion of the group presentation and the concepts derived from the activities.
Application of the Concepts	Dividing the learners into groups in accordance with the description sheet distributed. The activities are concerned with the application of the knowledge, for example, writing the motto, making the board, preparing the report, or their own directions of practices.

Source : Department of Mental Health, Ministry of Public Health, 2000 : 31

Principles of Participatory Attitude Teaching

The teaching of attitude was focused on affective domain which composed of 2 components : developing feelings regarding that attitude and organization of belief system. When these two stages were integrated with the general principles of participatory learning, the teaching of attitude composed of 2 steps, as showed in Figure 4.

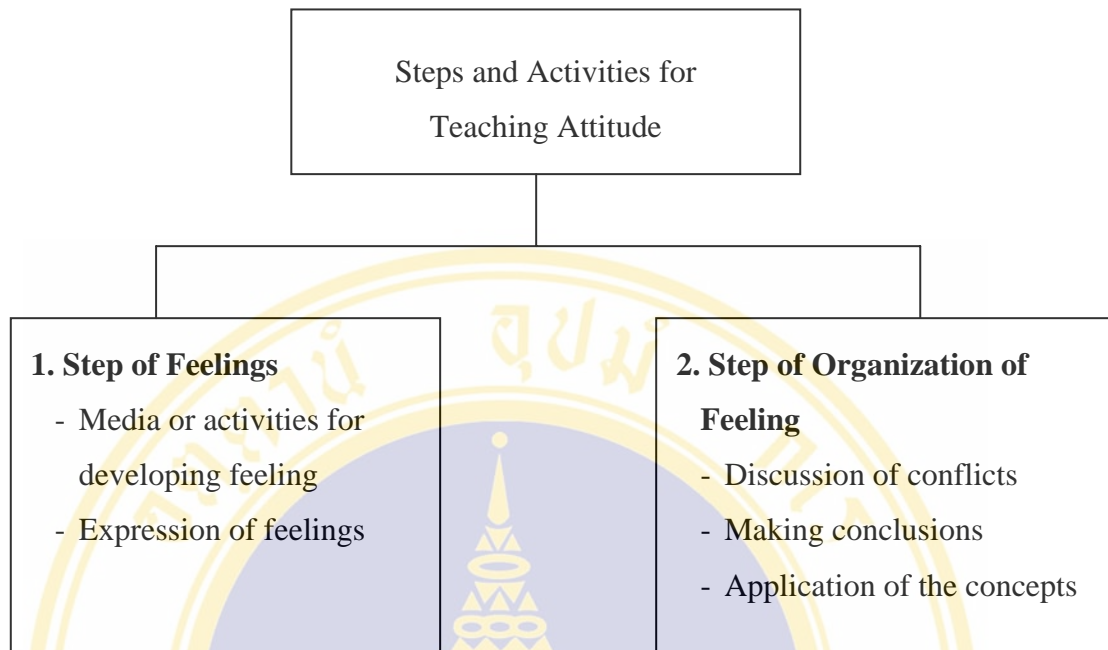


Figure 3 Principles of participatory attitude teaching

(Department of Mental Health, Ministry of Public Health, 2000 : 32)

Principles of Participatory Skill Teaching

In teaching a skill there is a need to clarify that skill to be visualized as the easy steps to be followed and the learners should have a chance to put into practice in their close environment. Skill is the ability that the learners never practiced before but after the learners have learned a lot and they can practice skillfully. There are 2 steps in teaching skills : 1) actualization step, the step that was aimed to have the learners perceived that those skills are important and can be trained; 2) action step, this step provides the learners to put the learning from the first step into practice (Department of Mental Health, Ministry of Public Health, 2000 : 36). See Figure 5.

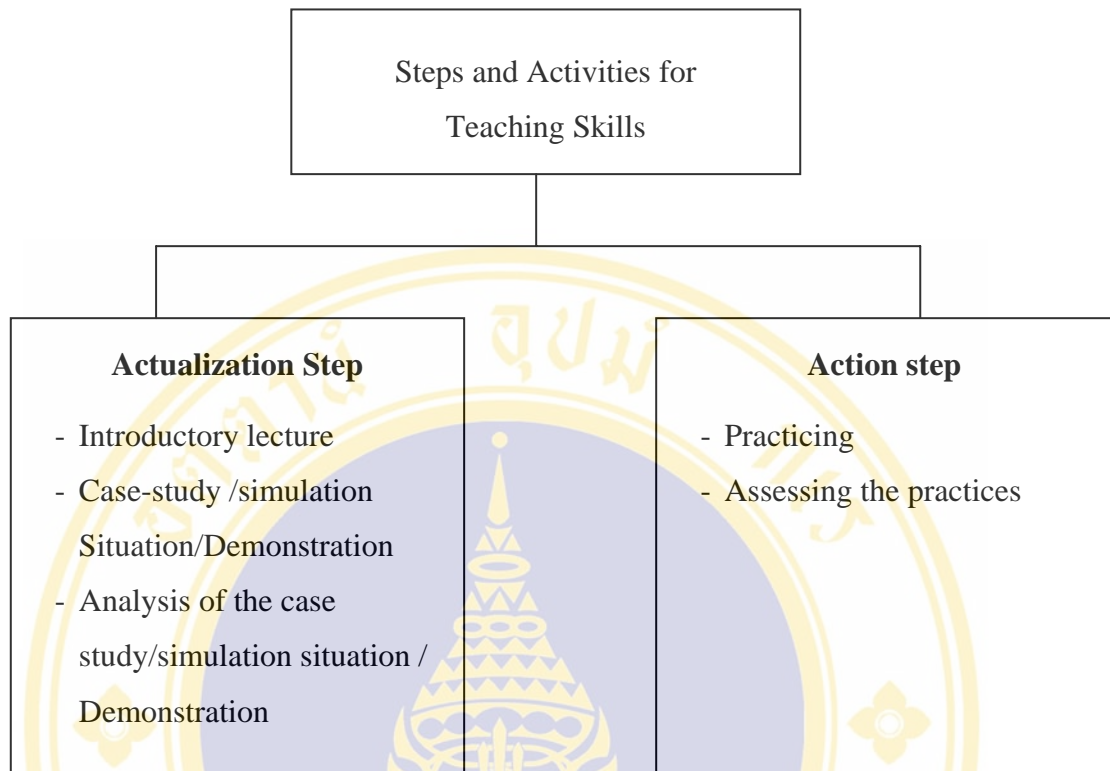


Figure 4 Steps in teaching skills

(Department of Mental Health, Ministry of Public Health, 2000 : 37)

The researcher applied the principles of participatory learning theory in organizing activities for the sampled students regarding consumption of 5 groups of foods, selection of no-color foods, avoiding having soda beverages and junk snacks, including the evaluation of self nutritional status of the students, aiming to enhance students knowledge, positive attitudes toward selection of food for consumption, and developing skills in selecting appropriate foods. This will be helpful in developing the students to be healthy adults.

3.2 Social Support Theory

<http://gotoknow.org/hlog/kenbenblogtheorg/115753>

Social Support (House, 1985 cited in Srongk at Duangkumswasdi, 1996 : 29-35)

1) Definition. Social support is the thing that the receiver received from the other persons as regards to message/information, material and psychological support from the supporters who may be individual or group. These supports will be helpful in making the receiver practiced or performed the behaviors accordingly to the supporters' desires. Social support may come from family members, for example, parents, siblings, etc. including neighbors, teachers, public health personnel, or village health communions.

Caplan (1976 : 39-42) defines social support as the thing that a person received directly from an individual or group, which may be information, money, labor or emotional support, etc. These supports will help the receiver reach the objectives set by the providers.

Pilisuk (1982 : 20) states that social support refers to the interaction between persons, not only the support regarding materials and emotional security, but also the condition the helps an individual gets the feeling that he/she has been accepted as a member of the group.

2) Sources of Social Support. Normally, there are two main types of social groups : primary and secondary groups. The primary group is the group that holds high level of relationship among the group members. This group may be the group family, siblings and neighbors. For the secondary group, it is the social group that has the relationship in accordance with the plan and the regulations set which influence the norms of the members of the groups. This group was concerned with co-workers, professional group, and other social groups. These groups, according to the social support system, have been changed all the time. It can be concluded that there are 2 sources of social support, primary and secondary social supports. The primary social support, which includes family, relatives, etc. is every important to illness and health behavior of the individuals especially emotional support from couples. For the social support from the secondary source which includes physician, nurses, public health personnel, and other persons, e.g. teachers, monks, community leaders, village health volunteers, etc. who are very important for providing support regarding information, and health related information.

3) Components of Social Support (Pilisuk, 1982 : 20) The important principles of social support are :

1. There is the communication between providers and the receiver.
2. The characteristics of the relationship should be composed of :
 - 2.1 The information that make the receiver believed that there is an attention, love, or sincere appreciation in the society.
 - 2.2 The information that makes the receiver feels that he/she is valuable and being accepted in society.
 - 2.3 The information that makes the receiver believes that he/she is one part of the society and is useful for the society.
3. The input factors of social supports may be in the forms of data, information, materials, or psychological support that will help the receiver reaches the objectives set.

4) Types of Social Support. House (cited in Banbara A. Israel, 1985 : 66) divided the types of social support into 4 types :

1. Emotional Support. This support concerned with providing emotional support, for example, satisfaction, recognition, care, etc.
2. Appraisal Support. It concerned with the support regarding evaluation. For example, giving feedback, affirmation, or informing the advantages or disadvantages of performing the behaviors, etc.
3. Information Support. This support concerned with the support regarding giving suggestion, warning, advice, and other types of information.
4. Instrumental Support. The examples of this type of support are labor, money, time, etc.

5) Levels of Social Supports. One behavioral scientist, Gottlieb (1985 : 5-12) divided the social support into 3 levels as follows :

1. Macro Level. The level of social support was considered by assessing the degree of participation / social participation. The assessment can be measured from the relationship with the social institutions, participation with various groups, willingness and informal lifestyle in the society, for example, involving in various activities in the society and the community that they live, e.g. the housewife who gives breast feeding, group of young adults who are working on community development, the group of people who are working to prevent AIDS, the group of people who are running poultry farm, handicraft group, agricultural housewife group, etc.

2. Mezzo Level. This level has been assessed by considering the structure and function of the social networking, with the group of people who have regular relationship, for example, friends, group of close person in the society, etc. Types of the support in this level are providing suggestions giving materials, friendship, emotional support, and recognition.

3. Micro Level. This level is considered as the level of the closest relationship of the members. The quality of the relationship depends on size, number and frequency of the relationship or the structure of the network. This level of support was found among the group of people, like husband and wife, and family members who have closely emotional relationship, who can provide psychological support, express love and care (affective support).

6) Effects of Social Support on Health. The reports of many researches showed 2 main effects of relationship between social support and health, as follows :

1. Physical Health

1.1 Direct Effect. The results of the study by Berkman and Syme, 1979 : 186-204 (cited in Minkler, 1981 : 150) who did the following-up study with 700 adults who lived in Amida County, California, for 9 years. The data were collected regarding general health condition and significant biostatistics and social support. It was found that those who received low social support had higher mortality rate and mortality rate 2.5 times than those who received higher level of social support. Regarding the relationship between social support and gender, race and

economics. The study of Cobb (1976) and Cassel (1961) (cited in Berkman and Syme 1979 : 186-240) showed that most of the patients with tuberculosis, hypertension and accident lacked social support or have been cut off from social support network. Besides, the result of the social epidemiological study showed that the persons who lacked social support will be susceptible to infection easily because the change of endocrine system which leads to the lower level of immunity.

1.2 Compliance to Regimens. There are many researches that showed the relationship between social support and compliance to regimens. Burgler (1985, cited in Pilisuk, 1985 : 94) found that most of the patients who followed the compliance to regimens had the support from their families in performing their behavior and the higher percentage of those who received high level of social support followed the compliance to regimens more than those who received lower level of social support.

1.3 Disease Preventive Behavior. Cobb (1976) and Langlie (1977) reported the study about disease prevention and health promotion behaviors, for example, yearly physical check-up, physical exercise, and food consumption that the persons who received high level of social support had better disease prevention and health promotion behaviors than who received low level of social support.

2. Mental Health

The effects of social support on mental health are similar to the effects on physical health. It was found that social support was helpful in increasing ability to fight the problems that the people are facing, to lower illnesses caused by stress, and to lower stress affecting the people immunity. Gore (1977 cited in Minkler, 1981 : 151) carried out the study with 110 unemployed males and it was found that the sample who received high level of social support had lower level of physical and mental health problems than those who received in level of social support had higher risk to get hypertension and heart diseases more than those who received high level of social support.

For this study, the researcher has used social support regarding emotional support and information support from classroom teachers and students' guardians as the encouragement and providing recommendations about food consumption to students with the aim to change food consumption behavior among the students. For the group of "Senior Students Teach Junior students" (Pee Son Nong", the emotional support had been provided

Part 4 Reheated Researches

4.1 Researches Related to Food Consumption Behavior

Siriluksana Sinthawalai (1987 : 11) studied attitudes and behaviors of 160 students, aged 7-18 years old, attending 6 government and private schools in Bangkok Metropolis. It was found that 58.7 percent selected that nutrition's snacks and most of them mentioned that they selected those snacks by themselves. Fifty one percent of the sampled group have dinner every day. It was also found that among the group of 10-12 years old, highest percent of them consumed snacks.

Sunee Muniprapa (1988 : 26) studied food consumption behavior of 90 grade 6 students attending the schools under the Office of Primary Education Committee, Muang District, Petchaburi Province. It was found that 57.78% preferred to eat syrup with ice and 54.44% preferred to have variety of junk snacks.

Chantana Limmirunkul (1989 : Abstract) studied the effectiveness of a health education program on food consumption behavior of grade 5 students attending schools in Bangkok Metropolis. Sixty students were selected from the sampled school selected accordingly to the criteria set, and were used as the experimental group. The research instruments used were the questionnaire sets for students and for school managers, observation sheet for collecting data of the food shops in the school, observation sheet for collecting data about students' behavior regarding the selection of foods, and the letters to the students' guardians. It was found that the significantly higher mean scores regarding knowledge, attitudes and practices after the

experimentation of the experimental group were found. Besides, significant positive relationship was found between food consumption behavior and attitudes.

Pissanu Uttamawatin et al. (1992 : 118) studied snack consumption behavior of children in the North-eastern Region. It was found that 96.63% of the sample have ever seen the advertisement about snack from television and 95.35% indicated that after they have seen the advertisement they bought candy, soda beverages, junk snacks and semi-cooked noodles.

Panida Rerngkamol (1993 : 62) carried out the comparison study learning achievement regarding the topic on snacks among grade 6 students who studied this topic by using programmed instruction and lecture. It was found that at the end of the teaching program, the basic knowledge about snacks of the experimental group and the comparison groups was higher than before the program. After the program it was found that learning achievement and learning sustainability of the experimental group were significantly higher than of the comparison group.

Nuankanog Umpaphon (1994 : 97-103) studied the effect of programmed learning or food consumption on food consumption behavior of grade to students, Tatago District, Nakornsawan Province. The programmed learning was composed of 4 sessions of educational activities about food consumption. The data were collected by using questionnaire and the record form for recording the food consumed for the past 3 days (Thursday, Friday and Saturday). It was found after the program, the significant higher mean score of knowledge regarding food consumption behavior in the experimental group was found compared to before the program. Besides after the program, the mean score of food consumption hygienic behavior in the experimental group was found to be the same as of the comparison group but the mean score of food consumption hygiene behavior of the experimental group was significantly higher than before the program.

Nalinee Magarasen (1995 : 93) students the factors affecting health behaviors regarding the National Health Commandments among grade 6 students, Suppanburi Province. It was found that 78.1 percent of the students practiced incorrect

behavior regarding consuming junk snacks regularly, 76.4 percent practiced incorrect behavior regarding consuming foods adding preservatives and color, and 48.2 percent practiced incorrect behavior regarding consuming all 5 groups of foods everyday.

Sudawan Khantamitr (1995 : Abstract) studied food consumption behavior of 500 sampled grade 6 students of the schools under the Office of the National Primary Education Committee. It was found that the knowledge about food consumption of the sample was at the “moderate” level. Their knowledge regarding : the types of foods that are useful for healthy bones and teeth, the usefulness of yellow-vegetables and fruits, and the foods that contain borax, was at the “low” level. Their attitudes and practices regarding food consumption were “good”.

Chamaiporn Youtniyom (1996 : a-b) studied the comparison of nutrition value of the foods consumed by senior high school students, aged 16-19 year old, who consumed fast food between the students of Saint John School and Wad Prassimahathart Demonstration school, Pranakorn Teacher College. The result of the study showed that among the male students who consumed fast food for 2 days received fat, vitamin B₁, Vitamin B₂, and cholesterol significantly higher than those who did not consume fast food, but received carbohydrate significantly less. For the female groups, those who consumed fast food for 2 days were found to received energy, and fat significantly higher than those who did not consume fast food but received carbohydrate, iron, Vitamin A, Vitamin C, niacin and fibre significantly less than the group who did not consume fast food. The result of this study also showed that the adolescents who come from the “moderate to almost high” socio-economic level consumed higher quantity of fat and cholesterol but low in fibre even though they did not consume fact food, and fast-food consumption added higher energy and fat. Thus, the nutrition education program aiming to promote the consumption of vegetables, fruit and milk instead of fat should be organized.

Sunee Wongsongkatap (1999 : Abstract) studied the evaluation of the use of the sweets consumption score as the mechanism of enhancing knowledge and motivating the change of sweets consumption behavior that affected the prevention of tooth decays among grades 5-6 students in Lopburi Province. The research was

composed of 3 phases. The first phase concurred with the study of the effect of changing Ph level of plaque after the children consumed 12 binds of sugary sweets. The second phase was to integrate the effects of phase 1 with the application of the Social Learning theory, Meditative Theory, Self-Efficacy Theory and Self-control Theory in organizing the curriculum of the topic on dental health and the practice program on tooth brushing and snack consumption. The third phase concerned with the evaluation of the dental health program achievement and the evaluation of tooth brushing practice program and sweets consumption behaviors. The experimental group composed of 73 students of grades 5 and 6, Thairatwittaya school and 85 students of grades 5 and 6, Polromanusorn School. The comparison composed of 89 students from Jangwadthaharnbog School. Basic data were collected before and after the program including following up the achievement of the change and the sustainability of the behavioral change for 6 times periodically. It was found that the two experimental group gained higher knowledge about dental health care than before the program and than the comparison group. The result of the study showed that the health education program organized was effective in increasing dental health knowledge and the practice program on dental health and sweets consumption was also effective in changing dental health behavior of students in Tharatwittaya School. Averagely the positive changes were found in Tharatwittaya School. The change was found to be different from Polromanusorn School. However, it was found that the new behaviors occurred during the first period of the program. But at the follow-up period, it was found that the changed behavior were not sustainable, the efficiency of the practice was found to be decreased at the end of the evaluation.

Wipawee Suwannathon (2000 : Abstract) studied the effectiveness of a health education program on the change of food consumption behavior of grade 6 students. Simple random sampling was used to select the school and students, with 52 students each in the experimental and the comparison group. After the program, it was found that the experimental group had significantly higher levels of knowledge about food consumption, perceived self-efficacy, response-efficacy about food consumption and foods consumption behavior, than before the program and significantly better than the comparisons group.

4.2 Researches Related to Participatory Learning

Yaowanee Wongsiri (1992 : Abstract) studies the change of food consumption behavior of preschool children by applying the principles of participation of the students, guardians teachers. The sample composed of 47 students guardians and 47 preschool students, aged 3-5 years attending Suankularb Palace School. The result of the research showed that the behavior regarding knowledge, attitudes and practices regarding preparing food for children among students' guardians was higher than before the program and food consumption behaviors of the sampled students regarding consuming nutritious food, consuming balanced diet from all 5 groups of food, and frequency of consuming food of each day were better than before the program. The finding among the students was congruent with the opinions of students' guardians and teachers derived from group meeting organized. Besides, it was found that most of the students guardians have participated all 3 group meetings organized as have participated in every steps of the activities.

Ruja Poopaiboon et al. (2000 : Abstract) studied the follow-up program of 1,135 sampled students who participated in the teaching learning program organized by the teachers who have been trained about the use of programmed instruction on "Life Immunity for Adolescents" for grades 7-9 students. There were 2 groups of the experimental groups, group 1 has been taught by the teachers who attended the "Intensive training" and group 2 has taught by the teachers who attended the "Non-intensive training". The numbers of the sampled group were 474 and 661 students in group 1 and group 2 respectively. The result of the study showed that in the proper coping behavior and good mental health of the students were found and have been sustained for at least 6 months. This study was evidenced that the long-term outcomes of the use of the programmed instruction on "Life Immunity for Adolescents" will be expected and it was useful in improving mental health.

Krisna Hamachai (2001 : Abstract) studied the participation of students' guardians and the factors relating the implementation of health promoting school program including problems and obstacles of implementing the program of the schools and students, guardians. The sample composed of 173 students' guardians and

students' guardians and students who were the members of the members of the health promoting school committees of the demonstration health promoting schools of the Health promoting regarding participation of students' guardians affecting the implementation of health promoting school program found were : age, knowledge regarding the program, attitudes, past experiences and receiving information. The problems and obstacles between schools and students' guardians were : the lack of participation in the program among the students' guardians due to no time available because the guardians have to work; difference of the knowledge received, the teachers responsible for the program have been assigned to another duties oftenly; the lack of academic skills among the students' guardians; and the lack of awareness about health promotion among the students' guardians. It was recommended that school should promote positive attitudes toward the program among the students' guardians and the activities should be planned cooperatively with the guardians in order to have the program suitable for the time available of the students' guardians. The methods for dissemination information should also be improved as well as supporting the students' guardians to participate more in every step of program implementation.

Rattana Charensatit (2002 : Abstract) studied the effects of teaching sex education applying participatory learning theory on knowledge and life skills relating sex education of grade 7 students attending the Demonstration school, Srinakarinnorote University, Prasarnmitra. The sample composed of 95 grade 7 students, attending the second semester of the academic year of 2002, 48 students in the experimental group and 47 students in the comparison group. Participatory learning theory was applied in the sex education program for the experimental group while the comparison group exposed to the normal sex education group exposed to the normal sex education program provided by the school teachers. The result of the study showed that the experimental group, after the completion of the program, gained significantly higher level of knowledge and life skills relating to sex education as self-proud ness, social responsibility, decision making, and skills in "Say No".

Eastern Maryland School, Sidney, Australia (1992) participated in the pilot study of health promoting school program which was organized by the Education unit and Maryland Community Health Center. The concept of health promoting school was

applied in the program. The main objective of the program was to have the community participated and being the owner of the health promoting activities. The first activity of the program was the establishment of the health committee composing of the representatives of the school personnel and senior officers from the local areas. The meeting was organized every month. The school food shops were supported and motivated to sell variety of nutritious foods and low-fat foods. The students' guardians were invited to attend the meeting about improving school lunch program for students. "Health Day" was also established and organized with the supports from various organization. The result of the program showed that the willingness of the community to participate in the program whereby parents and students guardians have participated in developing students' life skills and established the networks in the community. Besides, additional resources have been provided by the cooperation between schools and community. School personnel were aware about the health promoting school concepts and the schools had the poling on health promotion therefore the classroom teaching activities have been designed in order to improve the teaching.

Saint Teresa School in Sidney (1994) had participated in health promoting school program with Cranbury Community Health Service Unit. The concepts of health promoting school was utilized in organizing the activities that aimed to develop the good relationship between students' parents and guardians and brought them to participate in policy setting and other activities i.e. teaching some health related topics; providing and receiving health information; and giving feedback through school's newsletter. In the health education and physical education classes, the necessary health topics were put in the curriculum based on the health data from the health center and the health survey of community and school. The school cafeteria was also improved. The result of the study showed that the awareness of student's parents and guardians, regarding participation in curriculum development and personnel development and the programs of health education and physical education, was increased, including their interest in the health information. The students were happy with health education and physical education subjects. The school cafeteria provided more healthy food. Nutrition education program had been improved through

dissemination of more information. The data revealed that most of the students, school personnel, parents and guardian, school program organized.

Ieresa (1996) studied the effect of training community works with participatory methods on their ability to in the learning process of the housewives in Miami. The result of the study showed that the participatory training organized was effective in increasing the levels of knowledge and practices regarding food and nutrition. Better skills regarding cognition, affection and psychomotor were found compared to before the program. It was evidenced that the participatory training organized was the strategy that helps increasing interaction and was the learning process that makes the learners participated more in the learning, resulting in their increased ability in learning about nutrition.

Henry and Garcia (1999) studied various strategies in teaching nutrition education in 1998 by using small discussion groups. The sample composed of 31 students who were willing to participate in the program during the summer session. Experimental learning was applied for organizing the interesting learning activities and students have discussed the factors affecting selecting foods. The result of the study showed that the experimental group had more experiences and joyful atmosphere during the learning-teaching sessions and students and could do more self-study. This strategy in the challenging concept that helps create creativity and environment and environment of interactive participation. It was recommended that through group discussion, students can participate more than full-class discussion and group discussion is very excellent in motivating, disseminating knowledge, increasing joyful atmosphere, and relaxation.

4.3 Researches Related to Social Support

Orawan Pinswasdi (1998 : Abstract) studied the association of demographic factors family factors, and social support and the adjustments of adolescent students with impaired vision. The sample composed of 61 adolescent students aged 11-18 years, with the impaired vision, attending schools in Bangkok Metropolis. The result

of the study showed that the sample who received higher level of social support adjusted themselves better than those who received low level of social support.

Ruengsit Netruanyai (1998 : Abstract) studied that effect of treatment process of the hospitals and family social support on the quitting of addictive substances : a case-study in a hospital in the southern Region. The study has started from the first treatment until the success of the treatment. The qualitative study was employed by using observation technique, in-depth interview, and self-actualization group interview. The results of the study showed that parents, guardians, and close-friends had methods to encourage the patients by considering feelings, psychological condition of the patients, and realizing the fact that the patients need special attention more than before, but not too much attention. This encouragement provided was the psychological support extended to the patients for quitting addictive substances.

Nontapum Agtasaeng (2000 : Abstract) studied the effect of information presentation by applying Protection Motivation Theory and social support theory on the regularity of physical exercise behavior. The imposed of 120 first year nursing students of Nary Nursing College, Police Nursing College, and Air-force Nursing college, 40 students each. The following experimentation designs were managed in the sampled group : the presentation of information and providing social support for the first experimental group ; the presentation of information for the second experimental group ; and no presentation of information nor social support were managed in the comparison group, respectively. It was found that after the program the sampled students who received information and social support had significantly high level of intention to perform physical exercise hat before the program ($p < 0.01$) and had practiced the significantly higher level of physical exercise than before the program ($p < .001$). And after the program, those who received information and social support had significantly higher intention to practice physical exorcise than those t\who did not receive information and social support ($p < .05$) and practiced physical exercise continuously more than those who did not receive information and social support ($p < .001$).

Wasna Jansawang et al. (2000 : Abstract) studied the effectiveness of a health education program applying Protection Motivation Theory and social support on preventive behavior of Matayomsoksa 3 students (grade 4). The sample composed of 164 students, 78 students in the experimental group and 86 students in the comparison group. Health education program has organized in the experimental schools for 6 weeks, from December 1998 to February 1999. the data were collected 3 times, before, after the completion of the activities, and at the follow-up period, by using questionnaire and the form for recording social support from students' guardians. The data analysis was done by computing percentage, arithmetic means, standard deviation, paired sample t-test and Student's t-test. The result of the study showed that among the experimental group, the significantly higher levels of perceived severity and perceived susceptibility of the use of amphetamine, self-efficacy expectancy, response-expectancy, and intention to prevent amphetamine use, were found comparing to before the program and the comparison group ($p=0.000$).

Rawiwan Hongrapeepatana (2001 : Abstract) carried out the comparative study of the effectiveness of health education programs applying self-efficacy theory, and social support theory on dietary control, physical exercise, medication use and foot-care of 120 Type II diabetes mellitus. The 1st experimental group received the program applying self-efficacy theory while the 2nd experimental group received the program applying social support theory. Forty patients were in each group, experimental and comparison group. After the experimentation, among the 1st experimental group, significantly higher level of knowledge regarding diabetes, perceived self-efficacy, response expectancy, blood sugar level and accumulated blood sugar level, were found comparing to before the program and the comparison group. Among the 2nd experimental group, it was found that the group had significantly higher levels of knowledge about diabetes, social support, and practices for controlling blood sugar level and accumulated blood sugar level, comparing to before the program and the comparison group. Besides, it was found that higher level of knowledge about diabetes was found in the 1st experimental group than in the 2nd experimental group but no significant difference was found between the two experimental groups as regards to practices for controlling blood sugar levels. Therefore, in organizing health education

program for changing behaviors of diabetic patients to control blood sugar level in community hospitals, both theories, self-efficacy theory and social support theory, can be applied to suit the target group.

For the literature review of related concepts, theories, and researches about health behaviors of primary school students presented above, it can be concluded that the organization of health promotion activities for children was effective not only in increasing awareness, knowledge, and positive attitudes but also in developing sustainable behavior. The establishment of supportive environments that are conducive to desirable practices was also supporting the sustainable behaviors. The health promoting school concept is the concept that promotes the organization of holistic activities to support the educational activities and supportive environments that conducive to desirable practices which include the change of students' behaviors regarding healthy food consumption and having normal nutritional status. The research conceptual framework is presented in Figure 6.

Independent Variable

Dependent Variables

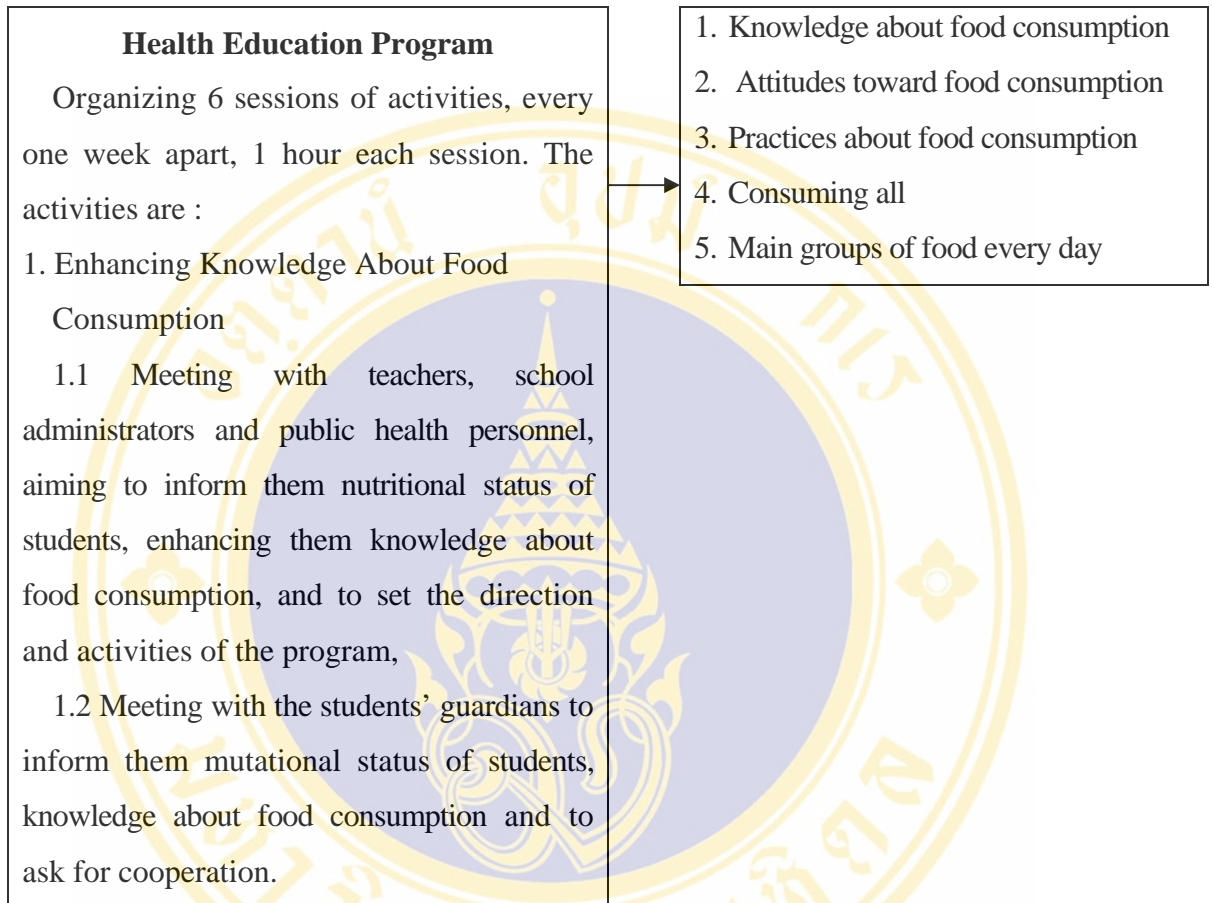


Figure 5 Research Conceptual Framework

CHAPTER 3

RESEARCH METHODOLOGY

This research was carried out by applying participatory learning theory and social support theory for organizing health education program for changing food consumption behavior of grade 6 students of Municipal School 3, Muang Prachinburi Municipality, Prachinburi Province. The implementation of the research activities was as follows :

- Part 1 Research Design
- Part 2 Population and Sample
- Part 3 Research Instruments
- Part 4 Research Procedures
- Part 5 Data Analysis

Part 1 Research Design

This study was a Quasi-experimental research, one group pre-test post-test design. The sample was grade 6 students attending Municipal School 3, Muang Prachinburi Municipality, Prachinburi Province. The sample was interviewed for collecting data regarding knowledge, attitudes and practices regarding food consumption, before and after the program. The research design is presented in Figure 7.

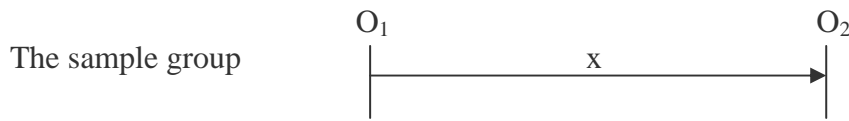


Figure 6 : Research Design

X : The health education program organized by the researcher

O₁: Data collection before the program

O₂: Data collection after the program

The experimentation plan is presented in Figure 8.

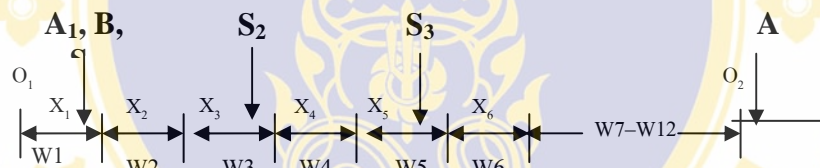


Figure 7 : Experimentation plan

A₁: Measuring body weight and height before the program

A₂: Measuring body weight and height after the program

B : Meeting with school teachers, school administrators, school health teachers, and public health personnel, for informing students’ nutritional status and asking for their cooperation in improving school lunch program and asking cooperation from the classroom teachers to encourage students of consume healthy food

S₁: Meeting with students’ guardians to inform them about students’ nutritional status, knowledge about food consumption, and ask for cooperation in implementing the program, providing suggestions and encouraging students to consume healthy foods.

S₂- S₃ : Sending the materials about knowledge regarding food consumption to the students' guardians as well as the letter for getting cooperation in providing suggestions and encouraging students to consume healthy food

X₁- X₆ : Organizing health education programs regarding consuming all 5 main groups of food, selection the foods without colors, avoiding consuming soda beverages and junk snacks, by the researcher. Six sessions of the health education activities are organized, 1 hour for each, and 1 week apart. The activities were composed of lecture, demonstration, bulletin board, organizing "Seniors Teach Juniors" group (Pee Son Nong), providing suggestions, persuading, and evaluating self-nutritional status by students themselves, by comparing with the standardized graph of Ministry of Public Health.

W₁- W₁₂ : The weeks that health education program was implemented, 1st – 12th weeks

O₁: Data collection before the program by using questionnaire regarding general information of students, measuring body weight and height

O₂: Data collection after the program regarding the same data collected in O₁

Part 2 Population and Sample

Population

The population of this study was composed of grade 6 students, both boys and girls, who are attending Municipals schools, Muang Prachinburi Municipality, Prachinburi Province. All together, there are 6 Municipal schools, with 383 students.

Selection of the Sample

The following criteria were used for collecting the sample :

1. The municipal schools in Prachinburi Province (6 municipal schools)
2. The schools have **not** started health promoting school programs.
3. The school administrators were interested in starting health promoting school program, supported and permitted the researcher to carry out the research project

From all 6 municipal schools where no school has started health promoting school program the researcher selected 1 school by using simple random sampling. The selected school was Municipal School 3, Wad kaewpijitara. There were 59 grade 6 students. All 59 students were selected as the sample. After the completion of the study, 2 students were taken out due to incomplete participation. Therefore, the number of the sample group was 57.

Part 3 Research Instruments

1. Instrument for Collecting Data

1.1 Collecting quantitative data. The questionnaire of “Students’ Food Consumption Behavior” was used. It was composed of the following 4 parts :

Part 1 General Information. This part was concerned with the questions regarding : gender, age, body weight, height, residency, family condition, number of siblings, birth order, money received for school expense, expenditure and chronic diseases.

Part 2 Knowledge About Food Consumption. There were 20 4-choice questions in this part, with the score range of 0-20. the scoring system was as follows :

Answer	Score
Correct	1
Incorrect	0

The criteria used of evaluating the knowledge score were based on the educational coterie developed by Bloom (1971 : 47 cited in Wipawee Suwannathion, 2000 : 44). The total score was grouped as follows :

Level of Knowledge	Percentage	Score
High	≥80	≥16
Moderate	60-79	12-15
Low	<60	<12

Part 3 Attitudes Toward Food Consumption. There were 20 statements, 3- point-sating scale. This part has been developed by following the methods of development rating scale of Likert. There were both positive and negative statements. The score rage was 0-40. The scoring system was as follows :

Response	Scoring System	
	Positive Statement	Negative Statement
Agree (Yes)	2	0
Uncertain	1	1
Disagree (No)	0	2

The criteria for educational measurement developed by Bloom (1971 : 47, cited in Wipawee Suwannathon, 2000 : 44) were applied to evaluate the attitude scores, as follows :

Level of Attitude	Percent	Score
High	≥80	≥32
Moderate	60-79	24-31
Low	<60	<24

Part 4 Food Consumption Behavior. This part was composed of 2 parts :

4.1 General Food Consumption Behavior. This part was concerned with : the preference taste of foods; having breakfast before going to school; having other food at school to replace breakfast; having snacks; number of meals taken; selecting snacks; washing hands before eating; methods of hand washing used washing hands after defecating, methods of hand washing after defecating.

4.2 Frequency of Consuming Some Foods. This part was consisted of 20 questions and the respondents were ask to check the frequency of consuming each type of food for the past week. The choices of frequency were provided. There were other the lists of foods that should positive and should not negative consume. The score range was 0-44 and the scoring system was as follows:

Frequency	Types of Foods	
	Should Consume	Should not Consume
Regular	2	0
Sometimes	1	1
Never	0	2

The evaluation of the scores was made by following the criteria of educational evaluation developed by Bloom (1971 : 47 cited in Wipawee Suwnnathon, 2000 : 44), as 3 levels :

Level of Attitude	Percent	Score
High	≥80	≥35
Moderate	60-79	26-34
Low	<60	<26

Construction and Quality Checking of the Instruments. The following steps were used :

1. Studying contents, texts and related researchers.
2. Identifying structure, contents, and the theories applies. Constructing the questions / statements covering all contents and the objectives of the study and the measurement.
3. Having the instruments constructed checked by the thesis advisors for correctness, content validity, the appropriateness of the language used and the clarification of the language. Revision was then made by the researcher before having the instrument protested.
4. Have the revised instrument tried out with 30 grade 6 students of Municipal School 4. Discrimination power analysis of each question / statement of the “knowledge Part” and “Attitude part” was made, in order to find difficulty. The reliability was analyzed by finding the coefficient of internal consistency by using cronbachis. Alpha coefficient method with the aim to improve the statement. The reliability values of the “Knowledge Part” and the “Attitude Part” were 0.59 and 0.58 respectively.

In the part regarding food consumption practices, the improvement of the questions has been done in order to make them relevant with the objectives and the appropriateness of the language used.

The Instrument Used for Carrying out the Experimentation.

1. Health Education Program. The program was organized by applying the participatory learning theory and social support with the aim to change

food consumption behavior of grade 6 students, Municipal School 3, Muang Prachinburi Municipality. It was composed of 6 lesson plans, 1 hour for each lesson. The activities use were included providing information by giving lecture, food models for demonstration, bulletin board, establishment of “Seniors Teach Juniors” club, providing suggestions & persuasion, and evaluation of self-nutritional status by comparing with the standard graph of Ministry of Public Health.

2. Persuasion letter. It was used 2 times during the experimentation, the 3rd and the 5th weeks.

3. The graph shows the standard growth of children 5-15 years old of the Department of Health, Ministry of Public Health.

4. Printed materials regarding the 5 main groups of food, safe food, and Ninth Notional Commandments. These printed materials were leaflets, posters, and exhibition set which was supported by the Provincial Public Health Office, Prachinburi Province.

Part 4 Research Procedures

Preparatory Phase

1. The researcher collaborated with Municipal School 3 in order to get permission to carry out the researcher project.

2. Informing the school administrators, school health teacher, the teacher who is responsible for school lunch program and the classroom teacher of grade 6, about the research's objectives and steps for carrying out the program and asking for cooperation.

Pre-Experimentation Phase

1. Having a meeting with the school administrators, school health teacher, classroom teacher, and the teacher who was responsible for school lunch program, to provide them information about food consumption and asking for cooperation from

the school administrators and the teacher who was responsible for school lunch program to prepare healthy lunch for students. The school administrators were also asked for cooperation not to sell ice cream and soda beverages during the research period and getting cooperation from the classroom teacher to help remind students to consume healthy food.

2. Collecting data by using questionnaire, before the program, to measure knowledge about food consumption, attitudes, toward food consumption and food consumption behavior.

3. The researcher worked cooperatively with the public health personnel from Muang Prajeenburi Municipality, classroom teacher and student leaders measure body weight and height of the sampled students.

4. Inviting students' guardians to attend the meeting aiming to enhance them knowledge about food consumption. The lecture was used to giving the information about consuming healthy and balanced diet. The students' guardians were encouraged continuously by sending them the materials about healthy food consumption 2 times, at the third and the fifth weeks.

Experimentation Phase

The activities were carried out by the researcher by using the time of the sessions on "Promoting Life Experience" of the section on "Learning about Life Experience". There were all together 6 hours, 1 hour for each session, as the following details of each activity :

Activity 1 (July 24, 2002 at 14.00-15.00 hours)

The activities was consisted of giving the lecture about healthy food consumption ; demonstration of healthy foods, by using food models; and having students discussed in small groups. The activities were organized by the researcher and resource persons from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office.

Activity 2 (July 31, 2002 at 14.00-15.00 hours)

The activities of this session was consisted of : giving lecture about the dangers from eating foods adding toxic colors; demonstration of those unhealthy food by showing food models : small group discussions about the dangers of eating colorful foods adding toxic colors. This session was organized by the researcher cooperatively with the resource persons form Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office.

Activity 3 (August 7, 2002 at 14.00-15.00 hours)

The public health personal from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office provided the information about measurement and evaluation of body weight and distributed the graphs of standard growth for children aged 5-15 years. Having students evaluate their own body weight by taking body weight, height, competing body weight and height with the graphs distributed, and discussing about the furthering measures that should be done. The students were asked to make the conclusions about the self-evaluation concept.

Activity 4 (August 14, 2002 at 14.00-15.00 hours)

The researcher and the public health personnel from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office lectured on consuming snakes and soda beverages and followed by having students discussed in small groups about negative consequences of those junk foods and their own behaviors.

Activity 5 (August 7, 2002 at 14.00-15.00 hours)

The public health personal from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office gave the lecture on healthy food consumption and helped the sampled students set the bulleting board about “safe food”, “dangers of colorful foods” and how to lower the consumption of the dangerous foods & snacks. The students leaders implemented the school-voce system on healthy food consumption in order to educates all school students. The “Seniors

Teach Juniors” groups were set up and led by the students leaders. These groups worked on giving suggestions for the lower class students regarding how to select the healthy foods and the dangers of consuming candy, junk snacks, fried meet balls that non-food colors were added. These groups also asked the cooperation from the teacher who was responsible for preparing fruit juice to be sold in the school shops instead of soda beverages.

Activity 6 (August 28, 2002 at 14.00-15.00 hours)

The students were divided into small groups. Each group was asked to discuss and suggest about the healthy and unhealthy foods. The concluded concepts were made by the researcher and the resource persons from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office.

Activity 7 (September 4,11,18,25, 2002)

The students leaders disseminated information about the dangers of consuming the foods with non-food colors added and how to lower the consumption of junk snacks though school-voice system and within the “Seniors Teach Juniors” group. The fruit juice has been sold in school food shop instead of soda beverages and junk snacks.

Post-Experimentation Phase

1. Collecting data after the completion of the program by using the same questionnaire used before the program.
2. Measuring body weight and height for making nutritional status analysis.
3. Observing food consumption behavior of students at school at the week after the completion of the program.

Part 5 Data Analysis

The data analysis has been done as follows :

The data regarding students' food consumption behavior were analyzed by setting significance at the level of confidence of 95% ($p\text{-value} < .05$). the statistic analysis of each part of the variable was presented as follows :

1. Socio-demographic data : frequency, percent age, mean and standard deviation
2. Knowledge, attitudes, and behavior about food consumption : frequency, percentage, mean, and standard, deviation.
3. Comparison of means and standard deviation of knowledge, attitudes of the sampled group between before and after the experimentation was done by computing paired samples t-test.

CHAPTER 4

RESULTS

This study was the application of participation learning theory and social support theory. The concepts from the two theories were applied for developing a health education program aiming to change food consumption behavior of grade 6 student in Muang Prachinburi Municipality, Prachinburi Province. The outline of the presentation of the research result was as follows :

- Part 1 General Information
- Part 2 Knowledge About Food Consumption
- Part 3 Attitudes Toward Food Consumption
- Part 4 Food Conscription Practices
- Part 5 Participation in Activities Organized

Part 1 General Information

The general information about personal characteristics as regards to gender, age, body weight, height, residency, family condition, number of siblings, birth order, money students received per day, expenditure, and chronic diseases.

The were 57 sampled students who participated completely in the program and answered the questionnaire. The results of the data analysis was as follows:

The sampled students were consisted of 44.0% of boys and 56.0% of girls, aged between 10-14 years, average age was 11.28 years, the majority of the respondents aged 11 and 12 years (31.6%) and 26.2% aged 15 years old.

Body weight. Most of the respondents had body weight of 20-63 kilograms with the average body weight of 35.563 kilograms. Most of the respondents had body weight lower than 30 kilograms (36.8%) while 33.3% had body weight between 30-40 kilogram.

Height. The average height of the respondents was between 127-159 centimeters with the average height was 140.72 centimeters. The majority of the respondents had height between 140.1-150.0 centimeters while 42.1% had height between 130.1-140.0 centimeters. See Table 1.

Table 2 Distribution of number and percentage of respondents by gender, age, weight and height

General Information	Respondents (n = 57)	
	Number	Percent
Gender		
Male	25	44.0
Female	32	56.0
Age		
10	15	26.2
11	18	31.6
12	18	31.6
13	5	8.8
14	1	1.8
$\bar{X} = 11.28, SD = 1.01, Min = 10, Max = 14$		
Body Weight (kgs)		
<30.00	21	36.8
30.01 – 40.00	19	33.3
40.01 – 50.00	12	21.1
>50.01	5	8.8
$\bar{X} = 35.563, SD = 10.985, Min = 20, Max = 63$		

Table 2 Distribution of number and percentage of respondents by gender, age, weight and height (continued)

General Information	Respondents (n = 57)	
	Number	Percent
Height (cm.)		
<130	2	3.5
130.1 – 140.0	24	42.1
140.1 – 150.0	26	45.6
150.1 – 160.0	5	8.8
$\bar{X} = 140.72, SD = 19.604, Min = 127, Max = 159$		

Residency. Most of the sampled group stayed with their parents (77.1%) while 10.5% stayed with their grand mothers / grand fathers.

Family Condition. There were 77.1% stated that their parents lived together while 10.5% stayed with their grand mothers / grand fathers.

Number of Siblings. Most of the sample group had 2 siblings (47.4%) while 17.5% had 3 siblings.

Birth Order. There were 45.6% of the group mentioned that they were the first child of the family and 31.6% mentioned that they were the 2nd child.

Money Received Per Day. The sample group mentioned that they received money 10-40 Baht per day when they come to school. The average amount of money received per day was 22.86 Baht. The highest percentage of the group (57.9%) said they received 21-30 Bahts per day while 35.0% received 31-40 Bahts.

Expenditure. For the money received per day, most of the sample group mentioned that they have spented for their lunch at school (96.5%), 94.7% said that they used for beverages, and 98.5% said that they used it for candy and snacks.

Chronic Diseases. There was a high percentage of the respondents (89.5%) mentioned that they did not have any chronic disease while 10.5% indicated that they have some chronic diseases, these are : asthma, anemia and allergy. See Table 2.

Table 3 Distribution of number and percentage of the respondents by residency, family condition, number of siblings, birth orders, money received per day, expenditure, and chronic diseases

General Information	Respondents (n = 57)	
	Number	Percent
Residency (Whom student stayed with)		
Father and Mother	44	77.1
Father	3	5.3
Mother	3	5.3
Grand mother/grand father	6	10.5
Relatives	1	1.8
Family Condition		
Father and mother stayed together	44	77.1
Father died	3	5.3
Mother died	3	5.3
Separated	1	1.8
Stayed with grand mother /grand father	6	10.5
Number of siblings		
1	5	8.8
2	27	47.3
3	10	17.5
4	6	10.5
5	7	12.3
6	1	1.8
7	1	1.8

Table 3 Distribution of number and percentage of the respondents by residency, family condition, number of siblings, birth orders, money received per day, expenditure, and chronic diseases (continued)

General Information	Respondents (n = 57)	
	Number	Percent
Student's Birth Order		
1	26	45.6
2	18	31.6
3	8	14.0
4	5	8.8
Amount Money Received		
1 – 10	1	1.8
11 – 20	33	57.9
21 – 30	20	35.0
31 – 40	3	5.3
$\bar{X} = 22.86, SD = 5.95, Min = 10, Max = 40$		
Expenditure		
Lunch	55	96.5
Beverages	54	94.7
Snack	51	89.5
Ice cream	17	29.8
Saving	5	8.8
Transportation	1	1.8
Chronic Disease		
No, Don't have	51	89.5
Yes	6	10.5

Part 2 Knowledge About Food Consumption

Before the Program. It was found that the knowledge score of the sampled students was between 2-14, from the total score of 20, with the mean score of 9.15. After the program, it was found that the sampled students had the knowledge score of 5-17, with the average of 11.37.

As reared to the level of knowledge about food consumption, before the program it was found that most of the sampled group had “low” level of knowledge about food consumption and 21.1 percent had “moderate” level of knowledge about food consumption. After the experimentation, it was found that 56.1 percent had “low” level of knowledge and 43.9 percent had “moderate level of knowledge about food consumption. See Table 3.

Table 4 Distribution of number and percentage of respondents by levels of food consumption, knowledge before and after the program

Levels of Food Consumption Knowledge	Before the Program (n = 57)		After the Program (n = 57)	
	Number	Percent	Number	Percent
Moderate	12	21.1	25	43.9
Low	45	78.9	32	56.1
	$\bar{X} = 9.1579, SD = 3.106,$ Min = 2, Max = 14		$\bar{X} = 11.37, SD = 2.72,$ Min = 5, Max = 17	

The study showed that the knowledge mean score about food consumption measured before the experimentation was 9.16 and the knowledge mean score of after the program was 11.37. According to the statistical test, the mean score after the program was significantly higher than before the program ($p < .01$). See Table 4.

Table 5 Comparison of knowledge mean score of the respondents, before and after the program

knowledge Score	n	\bar{X}	SD.	t	df	p - value
Before the Program	57	9.16	3.01	8.548	56	.000**
After the Program	57	11.37	2.72			

** p – value<0.01

Part 3 Attitudes Toward Food Consumption

Before the program, the attitude score toward food consumption was 14-37, with the total score of 40 and the attitude mean score was 29.45. after the program, the attitude score was found to be 20-37 with the mean score of 29.95.

Before the program 45.6 percent of the experimental group had the attitudes toward food consumption at the “high” level compared to 43.9 percent of those who had “moderate” level of attitudes toward food consumption. After the program it was found that the percentage of the sampled group whose attitudes mean score was at the “high” and “low” were the same as of before the program, 45.6 percent, had attitudes toward food consumption at the “high” level and 43.9 percent had the attitudes toward food consumption at the “moderate” level. See table 5.

Table 6 Distribution of number and percentage of the respondents by level of attitudes toward food consumption, before and after the program.

Levels of Attitudes toward food consumption	Before the Program (n = 57)		After the Program (n = 57)	
	Number	Percent	Number	Percent
High	26	45.6	26	45.6
Moderate	25	43.9	25	43.9
Low	6	10.5	6	10.5
	$\bar{X} = 29.4561$, SD = 4.8956, Min = 14, Max = 37		$\bar{X} = 29.95$, SD = 4.31, Min = 20, Max = 37	

Data from Table 6 showed that before the program the attitude mean score toward food consumption of the sample group was 29.46 compared to the attitude mean score of after the program. The significant difference was found between the two means at the 0.01 level (p-value = .004)

Table 7 Comparison of the attitude mean scores toward food consumption of the respondents, before and after the program

knowledge Score	n	\bar{X}	SD.	t	df	p - value
Before the Program	57	29.46	4.90	3.024	56	.004.000**
After the Program	57	29.95	4.31			

** p – value<0.05

Part 4 Food Consumption Practices

Before the program, it was found that the food consumption practice score of the sampled group was between 18-32, with the total score of 44 and the average score of 25.19. After the program, the practice score was found to be 20-32 with the average score of 25.42.

As regard to the practice level, it was found that 57.9 percent of the group had “low” level of food consumption practices while 42.1 percent had “moderate” level of food consumption practices. After the program, it was found that 56.1 percent had “low” level of food consumption practices and 43.9 percent had “moderate” level. See Table 7.

Table 8 Distribution of number and percentage of the respondents by level of food consumption, practices, before and after the program.

Levels of Food Consumption Practice	Before the Program (n = 57)		After the Program (n = 57)	
	Number	Percent	Number	Percent
High	24	42.1	25	43.9
Moderate	33	57.9	32	56.1
Low	$\bar{X} = 25.19, SD = 3.10,$ Min = 18, Max = 32		$\bar{X} = 25.42, SD = 2.96,$ Min = 20, Max = 32	
	24		42.1	

Data from Table 8 showed that before the program the food consumption behavior mean score of the sampled group was 35.19 and after the program the mean score was found to be 25.43. according to the statistical test, significant difference was found between the two means (p-value=.014)

Table 9 Comparison of food consumption behavior mean scores of the respondents between before and after the program

Food Consumption Practice Mean Score	n	\bar{X}	SD.	t	df	p - value
Before the Program	57	25.19	3.10	2.525	56	.014*
After the Program	57	25.42	2.96			

** p – value<0.05

Part 5 Participation in Activities Organized

Participation Teachers. The data from the observation showed that the sampled school administrators, school health teacher, the teacher who was responsible for school lunch program and all school staff have cooperated and participated in implementing the program. This was evidenced from the minutes of the school meetings. All of then meetings and all activities organized.

Participation of Students Guardians. It was found that the students' guardians have participated in the first meeting organized, 50 guardians form the total of 57(87.72%). The replied letters from the guardians regarding the first round of sending the reminding letters to them was found to be 52 letters (91.22%) compared to 52 replied letters of the second round of sending the reminding letters (78.94%)

Participation of Public Health Personnel. It was found that the public health personnel from Muang Prachinburi Municipality and from the Consumer Protection Unit of Prachinburi Provincial Public Health office have provided good cooperation (cooperation) in implementing the program, and in all activities organized, as was evidenced in the minutes of the meetings organized.

Participation of Students. It was found that all of 57 students of sixth grade participated in the program (100.0%)

The types and the numbers of students who participated in the program activities were : school sports activities (57.89%); Wan Waikru (The activities that students showed respects to teachers that was organized at the beginning of the first semester) and Mother's Day (15.79%); scooping Fish's Eggs Activity (10.53); Haetien Pansa Religions Ceremony and Activity of students council (8.78%); Songkran Festival Activities, Children's' Day; and Development of Wad (5.26%); Librarg Activity and Father's Day Activity (1.75%)

Regarding organizing the school's activities it was found that 87.82 percent of grade 6 students have participated in organizing the activities of the school which were concerned with cleaning and establishing a healthy school environment, suggesting and educating the junior students about how to do a sanitary garbage disposal, helping in the school's infirmary room including tubing care of the sick students ; and being the president of the student group.

It was also found that 89.47 percent of the sampled students indicated that they were satisfied with participating in organizing school activities.

CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATION

This study was a quasi-experimental research aiming the study the change of food consumption behavior of the sampled group of sixth grade of the Municipal School 3, Muang Municipality, who participated in the health education program. Participatory learning theory and social support have been applied for setting the research conceptual framework.

The sample of this study composed of 57 grade 6 students of Municipal School 3, Muang Municipality. The research instrument us for collecting data was the questionnaire developed by the researcher. The data were divided into 4 parts as follows :

Part 1 General Information. The information concerned with gender, age, body weight, height, whom the student lives with, family condition, siblings, birth order, amount of money received per day, expenditure, and chronic disease.

Part 2 Knowledge About Food Consumption

Part 3 Attitudes Toward Food Consumption

Part 4 Food Consumption Practices

Part 5 Participation in School Activities

The data were collected by using questionnaire, before and after the program. The program has been implemented for 63 months, from July to September, 2002.

The data collected were checked for quality and completeness of the data and were analyzed by using the programmed computer. For hypothesis testing, the level of statistical confidence was set at 0.05. The statistics used for data analysis of

the general information, knowledge, attitudes and food consumption practices were frequency, arithmetic means, standard and deviation. The comparison analysis of the means and standard deviations of knowledge attitudes and food consumption practices of the sampled students with in the group, before and after the program was done by using Paired samples t-test.

The conclusions, discussions and recommendations were presented as follows :

Conclusions of the Research Results

1. General Information

The general data of the sampled grade 6 students who answered the questionnaires were : 44.0 percent were males and 56.0 percent were females; aged between 10-14 years; 36.8 percent had body weight lower than 30 kilograms, 45.6 percent neighed 140.1-150.0 centimeters, 77.1 percent live with their mothers and fathers; 47.4 percent mentioned that their number of siblings was 2; 45.6 percent indicated that they were the first child of the family; 57.9 percent received 21-30 bahts per day; 96.5 percent used their money for lunch; and 89.5 percent did not have chronic disease.

2. Knowledge About Food Consumption

Before the program, the knowledge score regarding food consumption of the sample was 2-14 with the total score of 20 and the knowledge mean score of 9.16. After the program, the knowledge score was found to be 5-17 and the knowledge mean score was 11.37.

Before the program, most of the sample group had “low” level of knowledge about food consumption (78.9%) while 21.1 percent had “moderate” level. After the program it was found that 56.1 percent had “low” level of knowledge and 43.9 percent had “moderate” level.

The statistical test of the difference of the knowledge mean scores before the program ($\bar{x} = 9.16$) and after the program ($\bar{x} = 11.37$) was found to be significantly different ($p\text{-value} < 0.01$).

3. Attitudes Toward Food Consumption

Before the program, the attitude score toward food consumption of the sample was 14-37, with the total score of 40 and the attitude mean score was 29.45. After the program, it was found that the attitude score was 20-37 and the attitude mean score was 29.95.

Before the program, it was found that 45.6 percent of the sample had “positive” attitude toward food consumption while 43.9 percent were found to have “neutral” attitude. After the program, it was found that 43.9 percent had “positive” attitude toward food consumption while 43.9 percent had “neutral” attitude.

The data showed that before the program the attitude mean score of the sample was 29.46 compared to the attitude mean score measured at the end of the program as 29.95. The attitude mean score measured after the program was significant higher than of the attitude mean score measured before the program at the level of statistical significance of 0.01 ($p\text{-value} = 0.004$).

4. Food Consumption Practices

Before the program, it was found that the score of food consumption practices of the sample was 18-32 and the total score was 44 with the mean score of 25.19. After the program, the food consumption practice score was 20-32 with the practice mean score of 25.42.

Before the program, it was found that 57.9 percent had “low” level of food consumption practices and 42.1 percent had “moderate” level of food consumption practices. After the program, it was found that 56.9 percent had “low” level of practice mean score and 43.9 percent had “moderate” level of practice mean score.

Regarding the practice mean score of food consumption, the practice mean score before the program was 25.19 while the practice mean score after the program was found to be 25.42. The statistical test showed that the mean score of after the program was significantly higher than of before the program at the statistically significant level of 0.05 (p-value = 0.014).

5. Participation in the School Activities

Participation of School teachers. The data from the observation showed that school administrators, school health teachers, the teacher who was responsible for school lunch program, and all school teachers have cooperated and participated in the implementation of the program. It was evidenced from the minutes of the meetings organized. All activities organized including the meeting were interesting for all member and they have participated in all activities and meetings.

Participation of Students' Guardians. It was found that from all 57 students' guardians, 50 students' guardians have participated in the orientation meeting organized before the starting of the experimentation (87.7%). After the researcher has sent the first reminding letters the guardians, 52 guardians have replied (91.22%) while 45 guardians have replied the second round of the reminding letter (78.94%).

Participation of Public Health Personnel. It was found that public health personnel from Muang Prachinburi Municipality and the Consumer Protection Unit, Prachinburi Provincial Public Health Office have cooperated in the program by participating in the meetings and the activates organized. This fading was evidenced in the minutes of the meeting.

Participation of Students. It was found that all 57 sampled students have participated in all activities organized (100.0%).

The activities that the students have participated were as follows : Sports Day (57.89%) ; Waikru and Mother's Day (15.79%) ; Scooping of Fish's Eggs (10.53%) ; Haetien Punsu and Student Council Activities (8.78%); Songkran Festival,

Children's Day and Wad Development Activities (5.26%) ; and Library Activates and Father's Day Activities (1.75%).

Regarding the organization of the school's activities, it was found that 87.72 percent of the sampled students have participated in organizing the school's activities in regards to establishing the healthy school environments, telling and educating junior students about sanitary garbage disposal, helping the activities of the infirmary room and taking care of the sick students, and being the president of the student group.

There were 89.47 percent of the sampled students indicated that they were satisfied with the participation in organizing the school's activities.

Discussions

The result of the study of the effectiveness of a health education program applying participatory learning theory and social support on the changer of food consumption behavior of grade 6 students attending Municipal School 3, Muang Prachinburi Municipality, showed that the health education program organized was effective in changing students food consumption behavior in regards to knowledge about food consumption, attitudes toward food consumption, and food consumption practices.

1. Knowledge About Food Consumptions

From the study it was found that before the program, the knowledge mean score of the sample was 9.16 compared with the mean score of 11.37 after the program. The mean score of after the program was significantly higher than the mean score before the program (p -value=.000). This finding was similar to the study of Chantana Limmirunkul (1989 : Abstract) who studied the effectiveness of a health education program or food consumption behavior of 60 grade 5 students attending schools in Bangkok Metropolis. It was found that after the experimentation the knowledge mean score about food consumption was significantly higher than before

the experimentation. This was agreed with Nuankanog Umpaphone (1994 : 97-103) who studied the effects of a food consumption learning program on food consumption behavior of grade 6s students, Tatako District, Nakornsawan Province. It was found that after the program the significantly higher score about food consumption among the experimental group found compared to the mean knowledge score before the program. The study by Panida Rerngkamol (1993 : 62) was also congruent with this study whereby the comparison study of the learning achievement on snacks, of grade 6 students between using the programmed instruction and lecture. It was found that the basic knowledge regarding snacks both group, after the program, was significantly higher than before the program, and after the program it was found that the learning achievement and sustainability of the experimental group were significantly higher than of the comparison group. This finding was also similar with the study of Sunee Wongkongkatep (1999 : Abstract) who studied the use of evaluation of the score regarding snack consumption as the mechanism for teaching and persuading the changes of sweets consumption that causes dental problems among grader 5-6 students in Lopburi Province. The experimental group was consisted of 73 students of 5th and 6th grades from Tharat wittaya school and 85 students of 5th and 6th grades from Polromanusorn School students from Changwadtaharnbog School. The comparison group was consisted of 89 the finding of the research showed that there was the significantly increased knowledge regarding dental health care of both 2 experimental groups and was different with the comparison group. This finding was agreed with the study carried out by Wipawee Suwanthon (2002 : Abstract) who studied the effectiveness of the health education program on the change of food consumption behavior of 52 students each in the experimental and the comparison groups. After the program, it was found that the experimental group had significantly higher knowledge regarding food consumption than before the program and than the comparison group. This finding supports the Hypothesis 1.

2. Attitudes Toward Food Consumption

The study showed that the attitude mean score toward food consumption before the program was 29.46 compared to the attitude mean score of 29.95 after the program. The statistical test showed the significantly higher of the attitude mean score

after the program at the significant level at 0.01 ($p=.004$). This finding was similar to the study by Chantana Limnirunkul (1989 : Abstract) who studied the effectiveness of a health education program on food consumption behavior of 60 grade 5 students attending schools in Bangkok Metropolis. It was found that after the program, the experimental group had significantly higher attitude mean score toward food consumption than before the program. It was also similar to the study of Wipawee Suwanthon (2000 : abstract) who studied the effectiveness of the health education program in 52 grade 6 students in the experimental group and 52 grade 6 students in the comparison group. After the program, it was found that the response-expectancy of the experimental group was significantly higher than before the program and than the comparison group. The similar finding was found in the study by Teresa (1996 who studied the effect of training community workers with participatory methods on their ability to involve people in a process of learning about nutrition in 1996. The sample was the housewives in Miami. The study showed that the participatory training was effective in developing higher cognitive, affective and psychomotor dimensions among the workers than before the program. This finding support the Hypothesis 2.

3. Food consumption Practices

The finding of the study showed that before the program, the food consumption practice mean score of the sampled students was 25.19 compared to the practice mean score at after the program of 25.42. According to the statistical test, the mean score after the program was significantly higher than of before the program at the statistically significant level of 0.05 ($p\text{-value} = .014$). This finding was similar to the study of Chantana Limnirunkul (1989 : Abstract) who studied the effectiveness of the health education program on food consumption behavior of 60 grade 5 students attending schools in Bangkok Metropolis. It was found that among the experimental group the food consumption practice mean score after the program was significantly higher than before the program. This finding was similar to the study carried out by Nuankanog Umpaphon (1994 : 97-103) who studied the effects of programmed learning on food consumption behavior of grade 6 students, Tatak District, Nakonsawan Province. It was found that after the teaching, the mean score of sanitary food consumption practices was significantly higher than of before the program. This

finding was also agreed with the study of Sunee Wongsongkatep (1999 : Abstract) who studied the effect of using the sweets consumption practice score as the mechanism for educating and persuading the changes of sweets consumption behavior that affects the prevention of dental decays among grades 5-6 students, Lopburi Province. The experimental group was consisted of 73 students of the 5th and 6th grades in Thairatwittaya school and Polromanuson School. The comparison group was consisted of 89 students of the 5th and 6th grades in Changwadtaharnbog School. It was found that the health education program organized was effective in increasing dental health care behavior of the experimental group in Thairatwittaya School and was different from the behavior of Polromanuson School. This finding was also similar to the study of Wipawee Suwanthon (2000 : Abstract) who studied the effectiveness of a health education program on changing food consumption behavior of grade 6 students, 52 students each in the experimental and the comparison groups. After the program it was found that food consumption practice of the experimental group was significantly better than before the program and than of the comparison group. This finding supports the Hypothesis 3.

Recommendations

1. The health education program applying participatory learning theory and social support was effective in changing food consumption behavior of students in regards to knowledge about food consumption, attitudes toward food consumption, and food consumption practices. The activities used were lecture, demonstration, bulletined board, establishing “Seniors Teach Juniors”, providing recommendations and persuasion, and self-evaluation of nutritional status by comparing with the standard growth chart of the Ministry of Public Health. The researcher and the public health personnel from Muang Prachinburi Municipality and Prachinburi Provincial Public Health Office have also encouraged students to express their opinions which helped students were enthusiastic to learn and enjoyed their learning that led them to practice properly.

2. From the effectiveness of providing social support by the classroom teacher aiming to suggest and encourage students regarding food consumption as well as the social support provided by students' guardians, the groups of "Seniors Teach Juniors" organized, and the dissemination of information about food consumption through school voice program, this type of the activities should be implemented in other schools accordingly.

3. The inhibition of selling ice cream and soda beverages in school was the conducive policy of the school managers that lead to proper students' food consumption behavior.

Recommendation for Furthering Researchers

1. The body weight of the sample should added as another researcher variable for the future research on variable for the future research on food consumption behavior.

2. The comparison study of food consumption behavior between students in the government and private schools should be carried out.

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Appendix A

แบบสอบถามนักเรียน

เรื่องการพฤติกรรมการบริโภคอาหาร

ของนักเรียนประถมศึกษา เขตเทศบาลเมืองปราจีนบุรี

ส่วนที่ 1 ข้อมูลทั่วไป

คำชี้แจง ให้นักเรียนตอบคำถามต่อไปนี้โดยทำเครื่องหมาย / ลงใน หน้าข้อความ หรือ เติมลงในช่องว่างให้สมบูรณ์

1. ชื่อ.....นามสกุล.....ชั้น.....
2. เพศ 1. ชาย 2. หญิง
3. อายุ.....ปี
4. ปัจจุบันนักเรียน มีน้ำหนักตัว กิโลกรัม ไม่ทราบ
มีส่วนสูง เซนติเมตร ไม่ทราบ
5. ปัจจุบันนักเรียนอาศัยอยู่กับใคร
 1. บิดา มารดา 1. บิดา 3. มารดา 4. ปู่ย่า ตายาย
 5. อื่นๆ ระบุ.....
6. สภาพครอบครัวของนักเรียนเป็นอย่างไร
 1. บิดาและมารดาอยู่ด้วยกัน 2. บิดาและมารดาเสียชีวิต
 3. บิดาเสียชีวิต 4. มารดาเสียชีวิต
 5. บิดาและมารดาแยกกันอยู่ 6. อื่นๆ ระบุ.....
7. นักเรียนมีพี่น้องร่วมบิดามารดาเดียวกันทั้งหมด.....คน (รวมทั้งตัวนักเรียนด้วย)
และนักเรียนเป็นบุตรคนที่.....
8. นักเรียนได้รับเงินค่าใช้จ่ายมาโรงเรียนวันละ.....บาท
9. เงินค่าใช้จ่ายที่นักเรียนได้รับนำไปใช้อะไรบ้างในแต่ละวัน (ตอบได้มากกว่า 1 ข้อ)
 1. ค่าอาหารกลางวัน.....บาท 2. ค่าขนม.....บาท
 3. ค่าเครื่องคิม.....บาท 4. ค่าไอศกรีม.....บาท
 5. ค่าเดินทาง.....บาท 6. อื่นๆระบุ.....

10. ปัจจุบันนักเรียนมีโรคประจำตัวหรือไม่ (โรคประจำตัว หมายถึง โรคที่เป็นอยู่ในอดีตจนถึงขณะ
สัมภาษณ์ เช่น โรคหัวใจเรื้อรัง ภูมิแพ้ หอบหืด ลมชัก โลหิตจาง)(กลาก)(เกลือ)

O 1. ไม่มี

O 2. มี ระบุโรค.....

ส่วนที่ 2 ความรู้เรื่องการบริโภคอาหาร

คำชี้แจง ให้นักเรียนตอบคำถามต่อไปนี้โดยทำเครื่องหมาย / หน้าข้อความที่ถูกที่สุดเพียงข้อเดียว

- ข้อใด คือประโยชน์ของอาหารประเภทโปรตีน เช่น เนื้อสัตว์ ไข่ นม
 - ควบคุมการทำงานของร่างกายให้ปกติ
 - ช่วยป้องกันการกระทบกระเทือนของอวัยวะภายในได้
 - สร้างความเจริญเติบโต ซ่อมแซมส่วนที่สึกหรอ
 - ทำให้ร่างกายอบอุ่น
 - ไม่ทราบ
- ถั่วต่างๆ สามารถใช้บริโภคเพื่อทดแทนอาหารประเภทใด
 - ข้าว
 - ไขมัน
 - เนื้อสัตว์
 - ผักต่างๆ
 - ไม่ทราบ
- นักเรียนควรรับประทานไข่เป็ดหรือไข่ไก่อย่างน้อย สัปดาห์ละกี่ฟอง
 - 1-2 ฟอง
 - 3-4 ฟอง
 - 5-6 ฟอง
 - ไม่กำหนดแน่นอน
 - ไม่ทราบ
- นักเรียนโดยทั่วไปควรดื่มนมอย่างน้อยวันละกี่แก้ว
 - 1-2 แก้ว
 - 3-4 แก้ว
 - 5-6 แก้ว
 - ไม่ต้องดื่มก็ได้
 - ไม่ทราบ
- ถ้านักเรียนไม่ดื่มนม ควรจะรับประทานอะไรแทน
 - ผักสด
 - ผลไม้
 - ข้าว น้ำตาล
 - ข้าว เนื้อสัตว์ ผัก
 - ไม่ทราบ
- อาหารที่ให้พลังงานและความอบอุ่นแก่ร่างกายมากที่สุด คืออาหารประเภทใด
 - ไขมัน
 - โปรตีน
 - คาร์โบไฮเดรต
 - วิตามินและเกลือแร่
 - ไม่ทราบ
- คาร์โบไฮเดรต พบมากในอาหารประเภทใด
 - ปลา ไข่
 - เนื้อ ไขมัน
 - น้ำมันหมู เนย
 - ผัก กาด ผักนึ่ง
 - ไม่ทราบ
- ผัก และผลไม้มีสารอาหารอะไรมากที่สุด
 - ไขมัน
 - โปรตีน
 - คาร์โบไฮเดรต
 - วิตามินและเกลือแร่
 - ไม่ทราบ

9. ผลไม้ให้ประโยชน์อะไรต่อร่างกายมากที่สุด
- ให้ความอบอุ่นแก่ร่างกาย
 - ช่วยป้องกันการกระทบกระเทือนของอวัยวะภายในได้
 - ซ่อมแซมส่วนที่สึกหรอ
 - บำรุงรักษาผิวพรรณ เหงือก ฟัน นัยน์ตา
 - ไม่ทราบ
10. ประโยชน์ของไขมัน น้ำมันต่างๆ ที่มีต่อร่างกายมากที่สุดคือข้อใด
- ควบคุมการทำงานของร่างกายให้ปกติ
 - ให้พลังงาน ช่วยในการดูดซึมวิตามินบางชนิด
 - สร้างความเจริญเติบโต ซ่อมแซมส่วนที่สึกหรอ
 - ทำให้ร่างกายมีสุขภาพดี ปราศจากโรคภัยไข้เจ็บ
 - ไม่ทราบ
11. พืชชนิดใดนิยมนำมาใช้เป็นสีผสมอาหาร
- ใบขมิ้น
 - ใบฝรั่ง
 - ใบเตย
 - ใบตะไคร้
 - ไม่ทราบ
12. สีที่ **ไม่ควร** นำมาใช้ผสมอาหาร คือข้อใด
- สีดอกอัญชัน
 - สีข้อมผ้า
 - สีน้ำตาลเคี้ยวใหม่
 - สีจากกามมะพร้าวเผา
 - ไม่ทราบ
13. ถ้านักเรียนบริโภคอาหาร และเครื่องดื่มที่มีสีสังเคราะห์เป็นประจำ จะทำให้เกิดโรคอะไร
- โรคมะเร็ง
 - โรคนี้่ว
 - โรคตับอักเสบ
 - โรคกระเพาะอาหาร
 - ไม่ทราบ
14. อาหารชนิดใดที่พบว่ามีการใช้สีที่ **ไม่ใช่** สีผสมอาหารเจือปนมากที่สุด
- เย็นตาโฟ
 - ก๋วยเตี๋ยวเนื้อ
 - ข้าวราดแกงไก่
 - ก๋วยเตี๋ยวลูกชิ้น
 - ไม่ทราบ
15. ในแต่ละวันนักเรียนควรดื่มน้ำอย่างน้อยวันละกี่แก้ว
- น้อยกว่า 8 แก้ว
 - 8 แก้ว
 - มากกว่า 8 แก้ว
 - ดื่มกี่แก้วก็ได้
 - ไม่ทราบ
16. อันตรายจากการบริโภคอาหารที่ใส่สารกันบูดมากเกินไป คือข้อใด
- ระบบประสาทเสื่อมสมรรถภาพ
 - คลื่นไส้ อาเจียน ปวดท้อง ท้องเสีย
 - อาหารไม่ย่อย เบื่ออาหาร ท้องผูก
 - ปวดเมื่อยกล้ามเนื้อ ทำให้เป็นอัมพาต
 - ไม่ทราบ
17. ถ้าวินิจฉัยพบคนไข้รูปกรวยที่บรรจุน้ำมากเกินไป จะเกิดผลต่อร่างกายอย่างไร
- ท้องผูก
 - น้ำหนักลด
 - ขาดสารอาหาร
 - อ้วน
 - ไม่ทราบ

18. การเลือกอาหารมารับประทานต้องเป็นอาหารที่

- ก. ประุงสุกใหม่ๆ มีกลิ่นหอม อร่อย
- ข. ประุงสุกใหม่ๆ สะอาด ไม่มีสีหรือสารปนเปื้อนที่เป็นอันตราย
- ค. ประุงสุกใหม่ๆ มีกลิ่นหอม มีสีสันสดใส
- ง. ไม่มีอันตราย ไม่มีสารกันบูด
- จ. ไม่ทราบ

19. เครื่องดื่มที่ให้วิตามินและเป็นประโยชน์ต่อร่างกายได้แก่เครื่องดื่มประเภทใด

- ก. เครื่องดื่มประเภทชูกำลัง (ตามโฆษณา)
- ข. น้ำผลไม้
- ค. น้ำอัดลม
- ง. ชา กาแฟ
- จ. ไม่ทราบ

20. การล้างมือก่อนและหลังรับประทานอาหารช่วยป้องกันโรคอะไรได้

- ก. โรคอุจจาระร่วง
- ข. โรคท้องผูก
- ค. โรคขาดสารอาหาร
- ง. โรคหวัด
- จ. ไม่ทราบ

ส่วนที่ 3 ทศนคติต่อการบริโภคอาหาร

คำชี้แจง ให้นักเรียนตอบคำถามต่อไปนี้ โดยทำเครื่องหมาย / ลงในช่องที่ตรงกับความคิดเห็นของนักเรียนมากที่สุด

ข้อความ	ใช่	ไม่แน่ใจ	ไม่ใช่
1. อาหารที่ขายอยู่ในห้องตลาดทุกชนิดมีความปลอดภัย			
2. การดื่มน้ำอัดลมเป็นสิ่งที่โก้เก๋			
3. การรับประทานอาหารที่ได้สารกันบูด ทำให้ปวดท้อง			
4. ซอสแดงที่ใส่ในเย็นตาโฟทำให้รสชาติอร่อย นำรับประทาน			
5. การบริโภคอาหารที่ไม่ได้สี น่าจะปลอดภัยกว่าอาหารที่มีสีสันๆ			
6. อาหารที่มีสีสัง สดใส เป็นอาหารที่น่ารับประทาน			
7. การรับประทานขนมขบเคี้ยว คุกกี้กรอบ ช่วยทดแทนการรับประทานข้าวได้			
8. อาหารรสจัด ไม่เหมาะสมสำหรับเด็ก			
9. ลาบก้อย สุกๆดิบๆ มีรสชาติดีกว่าลาบก้อยที่ทำให้สุก			
10. ควรรับประทานผลไม้ตามฤดูกาล เช่น กระท้อน มะม่วง เงาะ ทุเรียน มากกว่าผลไม้ดอง			
11. การรับประทานอาหารมากกว่าวันละ 2 มื้อ จะทำให้อ้วน			
12. การดื่มน้ำมากๆ ในแต่ละวัน ทำให้ร่างกายสดชื่น			
13. การรับประทานผักและผลไม้ ทำให้ร่างกายขับถ่ายได้คล่องไม่ต้องผูก			
14. เราควรรับประทานอาหารที่ปรุงสุกใหม่ๆ ไม่มีแมลงวันตอม			
15. การรับประทานเค้ก พิซซ่า โดนัท ไข่ทอด เป็นประจำ ทำให้เป็นคนทันสมัย			
16. ถ้ารับประทานทอफी ลูกกวาด หมากฝรั่งเป็นประจำ จะทำให้ฟันผุ			
17. การล้างมือก่อนรับประทานอาหารเป็นมารยาทที่ทุกคนควรปฏิบัติ			
18. การเช็ดมือหลังการขับถ่ายโดยไม่ต้องล้างสบู่ก็สะอาดเพียงพอแล้ว			
19. อาหารราคาแพงมีคุณค่ามากกว่าอาหารราคาถูก			
20. รับประทานอาหารให้ครบ 5 หมู่ ก็จะป้องกันโรคขาดสารอาหารได้			

ส่วนที่ 4 พฤติกรรมการบริโภคอาหาร

คำชี้แจง ให้นักเรียนตอบคำถามต่อไปนี้โดยทำเครื่องหมาย / หน้าข้อความที่ตรงกับการปฏิบัติ
ของนักเรียนมากที่สุด

- ตามปกตินักเรียนชอบรับประทานอาหารรสชาติแบบใดมากที่สุด (ตอบเพียง 1 คำตอบ)

ก. หวาน	ข. มัน	ค. เค็ม	ง. เปรี้ยว	จ. เผ็ด
ฉ. จืด	ช. อื่นๆ ระบุ.....			
- นักเรียนรับประทานอาหารเช้าที่บ้านก่อนมาโรงเรียน หรือไม่

ก. รับประทานทุกวัน (ข้ามไปตอบข้อ 5)	ข. รับประทานบางวัน	ค. ไม่ได้รับประทาน
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- ถ้าไม่ได้รับประทานอาหารเช้าที่บ้าน นักเรียนรับประทานอาหารเช้าที่โรงเรียนทดแทนอาหารเช้าหรือไม่

ก. ไม่ได้ทาน	ข. ใช้อาหารรับประทาน
ค. ซื้อขนมรับประทาน	ง. อื่นๆ ระบุ.....
- ถ้าไม่ได้รับประทานอาหารเช้าที่บ้านและที่โรงเรียน นักเรียนต้องรับประทานอาหารเช้า (หรือขนม) ก่อนถึงมือกลางวัน หรือไม่

ก. ไม่ได้ทาน	ข. ทาน
ค. อื่นๆ ระบุ.....	
- โดยปกติใน 1 วัน นักเรียนกินอาหารมื้ออะไรบ้าง

ก. มื้อเช้า	ข. มื้อเช้าและมือกลางวัน	ค. มื้อเช้าและมือเย็น	ง. มื้อกลางวันและมือเย็น
จ. มื้อเช้า มื้อกลางวัน และมือเย็น			
ฉ. มื้อเช้า มื้อกลางวัน มือเย็น และ มือพิเศษอาหารระหว่างมือ			
- นักเรียนเลือกซื้อขนมในการรับประทานอย่างไร

ก. ซื้อตามที่ชอบ	ข. ซื้อตามโฆษณาที่เห็นทางโทรทัศน์	ค. ดูจากสลากก่อนซื้อรับประทาน
ง. อื่นๆ ระบุ.....		
- นักเรียนล้างมือก่อนการรับประทานอาหารเช้าหรือไม่

ก. ล้างทุกครั้ง	ข. ล้างเป็นบางครั้ง	ค. ไม่เคยล้างเลย (ข้ามไปตอบข้อ 9)
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- ถ้านักเรียนล้างมือก่อนการรับประทานอาหารเช้า นักเรียนมีวิธีการล้างมืออย่างไร

ก. ล้างมือด้วยน้ำเปล่า	ข. ล้างมือด้วยสบู่และน้ำ	ค. เช็ดมือโดยไม่ล้างด้วยน้ำ	ง. อื่นๆ
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9. นักเรียนล้างมือหลังการจับถ่ายทุกครั้ง หรือไม่
 ก. ล้างทุกครั้ง ข. ล้างเป็นบางครั้ง ค. ไม่เคยล้างเลย (ข้ามไปตอบข้อ 11)
10. ถ้านักเรียนล้างมือก่อนการรับประทานอาหาร นักเรียนมีวิธีการล้างมืออย่างไร
 ก. ล้างมือด้วยน้ำเปล่า ข. ล้างมือด้วยสบู่และน้ำ ค. เช็ดมือโดยไม่ล้างด้วยน้ำ ง. อื่นๆ
11. นักเรียนรับประทานอาหารต่อไปนี้อย่างน้อยเพียงใด

คำชี้แจง ให้นักเรียนทำเครื่องหมาย / ลงในช่องที่ตรงกับการปฏิบัติของนักเรียนมากที่สุด

ปฏิบัติเป็นประจำ หมายถึง กินอาหารชนิดนั้นๆ 4 ถึง 7 ครั้ง ต่อสัปดาห์

ปฏิบัติเป็นบางครั้ง หมายถึง กินอาหารชนิดนั้นๆ 1 ถึง 3 ครั้ง ต่อสัปดาห์

ไม่เคยรับประทานเลย หมายถึง ไม่เคยรับประทานอาหารชนิดนั้นๆ เลยใน 1 สัปดาห์

ประเภทอาหาร	การปฏิบัติ		
	เป็นประจำ	เป็นบางครั้ง	ไม่เคยรับประทาน
1. ข้าว			
2. ก๋วยเตี๋ยว			
3. นม เช่น นมสด นมกล่อง นมถั่วเหลือง อย่างน้อยวันละ 1 แก้ว			
4. อาหารที่ทำจากถั่ว เช่น เต้าหู้ ถั่วลิสงต้ม			
5. ไข่ เช่น ไข่ไก่ ไข่เป็ด ไข่นกกระทา			
6. อาหารที่ปรุงจากเนื้อสัตว์ เช่น หมู วัว ควาย ปลา ไก่ เป็ด			
7. อาหารทะเล เช่น กุ้ง หอย ปู ปลาหมึก			
8. ผักผัก			
9. ผลไม้ตามฤดูกาล เช่น กลิ้ว ส้ม แดง ฝรั่ง มะขามกระท้อน			
10. ผลไม้รสหวาน เช่น ขนุน ละมุด ทุเรียน ลำไย มะม่วงสุก องุ่น			
11. ขนมทอด เช่น กลิ้วทอด ปาท่องโก๋			
12. ขนมหวานใส่กะทิ เช่น ข้าวเหนียวมูน กลิ้วบวชชี บัวลอย			
13. ลูกชิ้นทอดที่มีสีสังเคราะห์ เช่น สีส้ม สีแดง			
14. น้ำหวาน น้ำอัดลม เช่น เครื่องดื่มที่ใส่น้ำขันทาน หรือ น้ำตาล			
15. เครื่องดื่มประเภท ชา กาแฟ โอเลี้ยง			
16. เครื่องดื่มชูกำลัง (ตามที่โฆษณา)			
17. เบเกอรี่สำเร็จรูป บรรจุซอง			
18. อาหารเบเกอรี่ ประเภทขนมปัง เค้ก โดนัท พิชซ่าแฮมเบอร์เกอร์ ไข่ทอด			
19. ทอฟฟี่ ลูกกวาด หมากฝรั่ง			
20. ขนมขบเคี้ยว คุกกี้กรอบ บรรจุเป็นซอง			
21. ไข่กรอบ ที่มีสีสังเคราะห์			
22. กุนเชียง ที่มีสีสังเคราะห์			

ส่วนที่ 5 การมีส่วนร่วมในกิจกรรมของโรงเรียน

คำชี้แจง ให้นักเรียนตอบคำถามต่อไปนี้ โดยการเติมคำในช่องว่างที่ตรงกับกรปฏิบัติของนักเรียนมากที่สุด

1. นักเรียนมีส่วนร่วมในกิจกรรมของโรงเรียน กิจกรรมใดบ้าง

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2. นักเรียนมีส่วนร่วมในการจัดกิจกรรมของโรงเรียน อย่างไรบ้าง

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3. นักเรียนพึงพอใจในการมีส่วนร่วมกิจกรรมเหล่านั้น หรือไม่ อย่างไร

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โปรแกรมการจัดกิจกรรมสุขศึกษา

วัตถุประสงค์

1. เพื่อให้นักเรียนได้รับความรู้เกี่ยวกับการบริโภคอาหารหลัก 5 หมู่อาหารใส่สีที่เป็นอันตราย และขนมขบเคี้ยว
2. เพื่อให้นักเรียนสามารถเลือกรับประทานอาหารให้ครบทุกประเภท ของอาหารหลัก 5 หมู่ ใน 1 วัน
3. เพื่อให้นักเรียนลดการซื้ออาหารใส่สีที่เป็นอันตราย และขนมขบเคี้ยว

กลุ่มเป้าหมาย

นักเรียนชั้นประถมศึกษาปีที่ 6 จำนวน 57 คน

ระยะเวลา

วันที่ 24 กรกฎาคม 2545 - 25 กันยายน 2545 เวลา 14.00 – 15.00 น.

สถานที่

บริเวณโรงอาหาร โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

กิจกรรม

จัดกิจกรรม 6 ครั้ง ครั้งละ 1 ชั่วโมง

วันเดือนปี	กิจกรรมครั้งที่	เนื้อหา
24 กรกฎาคม 2545	1	การบริโภคอาหารที่ถูกหลักโภชนาการ
31 กรกฎาคม 2545	2	การบริโภคอาหารใส่สีที่มีอันตราย
7 สิงหาคม 2545	3	การประเมินน้ำหนักมาตรฐานของนักเรียน
14 สิงหาคม 2545	4	การบริโภคขนมขบเคี้ยว ขนมกรุบกรอบ และน้ำอัดลม
21 สิงหาคม 2545	5	อาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว
28 สิงหาคม 2545	6	การบริโภคอาหารปลอดภัย

รายละเอียดของกิจกรรม มีดังต่อไปนี้

แผนการสอนที่ 1

เรื่อง ความรู้เกี่ยวกับการบริโภคอาหารที่ถูกหลักโภชนาการ

วันที่ 24 กรกฎาคม 2545 เวลา เวลา 14.00 – 15.00 น.

วัตถุประสงค์เชิงพฤติกรรม

เพื่อให้นักเรียนบอกถึงประโยชน์และโทษของอาหารหลัก 5 หมู่ และสามารถเลือกประเภทของอาหารหลัก 5 หมู่ ใน 1 วัน ได้

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้ในเรื่องอาหารหลัก 5 หมู่ นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่มีประโยชน์ได้ถูกต้อง

กิจกรรมและวิธีดำเนินการ

การบรรยายให้ความรู้ เรื่อง อาหารหลัก 5 หมู่ สาธิตอาหารที่ถูกหลักโภชนาการ ด้วยชุดอาหารสาธิต แบ่งกลุ่มและอภิปรายกลุ่ม เรื่องประโยชน์ของอาหารหลัก 5 หมู่ รวมถึงโทษของการรับประทานอาหารไม่ครบ 5 หมู่ ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับวิทยากรจากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

วัสดุ อุปกรณ์

ชุดอาหารสาธิต ภาพพลิกอาหารหลัก 5 หมู่ ไมโครโฟน เครื่องเสียง

การประเมินผล

1. จากการสังเกตและความสนใจการมีส่วนร่วมในกิจกรรมของนักเรียน
2. ประเมินความรู้ด้านอาหารหลัก 5 หมู่

แผนการสอนที่ 2**เรื่อง การบริโภคอาหารใส่สีที่มีอันตราย****วันที่ 24 กรกฎาคม 2545 เวลา เวลา 14.00 – 15.00 น.****วัตถุประสงค์เชิงพฤติกรรม**

เพื่อให้นักเรียนบอกถึง โทษของอาหารใส่สีที่เป็นอันตราย ได้

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้ในเรื่อง โทษของอาหารใส่สีที่เป็นอันตราย นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่ไม่ใส่สีที่เป็นอันตรายได้

กิจกรรมและวิธีดำเนินการ

การบรรยายให้ความรู้ เรื่อง โทษของอาหารใส่สีที่เป็นอันตราย วิธีการเลือกอาหารที่ไม่มีสีที่เป็นอันตรายต่อการบริโภค ด้วยชุดอาหารสาธิต แบ่งกลุ่มและอภิปรายกลุ่ม เรื่องโทษของอาหารใส่สีที่เป็นอันตราย วิธีการเลือกอาหารที่ไม่มีสีที่เป็นอันตรายต่อการบริโภค ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับวิทยากรจากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

วัสดุ อุปกรณ์

ชุดอาหารสาธิต ภาพพริกอาหารใส่สีที่เป็นอันตราย ไมโครโฟน เครื่องเสียง

การประเมินผล

จากการสังเกตและความสนใจการมีส่วนร่วมในกิจกรรมของนักเรียน

แผนการสอนที่ 3

เรื่อง การประเมินน้ำหนักมาตรฐานของนักเรียน

วันที่ 31 กรกฎาคม 2545 เวลา เวลา 14.00 – 15.00 น.

วัตถุประสงค์เชิงพฤติกรรม

เพื่อให้นักเรียนบอกถึง น้ำหนักมาตรฐานตามเพศวัยของนักเรียน

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้เกี่ยวกับน้ำหนักที่เหมาะสม ตามเพศ วัย ของนักเรียน นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่ถูกต้องหลักโภชนาการและเหมาะสมได้

กิจกรรมและวิธีดำเนินการ

การบรรยายให้ความรู้ เกี่ยวกับการประเมินน้ำหนักมาตรฐานของนักเรียน โดยใช้กราฟประเมินมาตรฐานการเจริญเติบโตของเด็กชายและเด็กหญิง อายุ 5-15 ปี ของกระทรวงสาธารณสุข แบ่งกลุ่มประเมินน้ำหนักมาตรฐานของนักเรียนในกลุ่มและอภิปรายผลวิธีการปรับเปลี่ยนพฤติกรรมนักเรียนที่มีน้ำหนักที่เกินเกณฑ์มาตรฐาน และนักเรียนที่มีน้ำหนักต่ำกว่าเกณฑ์มาตรฐาน ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับวิทยากรจากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

วัสดุ อุปกรณ์

กราฟประเมินมาตรฐานการเจริญเติบโตของเด็กชายและเด็กหญิง อายุ 5-15 ปี ของกระทรวงสาธารณสุข ไมโครโฟน เครื่องเสียง

การประเมินผล

1. จากการสังเกตและความสนใจการมีส่วนร่วมในกิจกรรมของนักเรียน
2. ผลการประเมินน้ำหนักมาตรฐานของนักเรียน

แผนการสอนที่ 4**เรื่อง การบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม****วันที่ 7 สิงหาคม 2545 เวลา เวลา 14.00 – 15.00 น.****วัตถุประสงค์เชิงพฤติกรรม**

เพื่อให้ นักเรียนบอกถึง โทษของการบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้เกี่ยวกับ โทษของการบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่ถูกหลักโภชนาการและเหมาะสมได้

กิจกรรมและวิธีดำเนินการ

การบรรยายให้ความรู้ เกี่ยวกับโทษของการบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม โดยใช้ภาพพลิก เอกสารโปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข แบ่งกลุ่มและอภิปรายกลุ่ม เกี่ยวกับโทษของการบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับวิทยากรจากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

วัสดุ อุปกรณ์

ภาพพลิก เอกสารโปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข เกี่ยวกับโทษของการบริโภคขนมขบเคี้ยว ขบมกรูบกรอบ น้ำอัดลม ไมโครโฟน เครื่องเสียง

การประเมินผล

จากการสังเกตและความสนใจการมีส่วนร่วมในกิจกรรมของนักเรียน

แผนการสอนที่ 5

เรื่อง อาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว

วันที่ 14 สิงหาคม 2545 เวลาเวลา 14.00 – 15.00 น.

วัตถุประสงค์เชิงพฤติกรรม

เพื่อให้แก่นักเรียนบอกถึง อาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้เกี่ยวกับ อาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่ถูกหลักโภชนาการ และเหมาะสมได้

กิจกรรมและวิธีดำเนินการ

การจัดนิทรรศการ การบรรยายให้ความรู้ เกี่ยวกับอาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว โดยใช้บอร์ดนิทรรศการ ภาพพลิก เอกสารโปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข แบ่งกลุ่มและตอบคำถามเกี่ยวกับอาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับวิทยากร จากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

วัสดุ อุปกรณ์

นิทรรศการ ภาพพลิก เอกสาร โปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข เกี่ยวกับอาหารปลอดภัย อันตรายของอาหารใส่สี การลดการรับประทานขนมขบเคี้ยว ไมโครโฟน เครื่องเสียง

การประเมินผล

จากการสังเกตและการมีส่วนร่วมในกิจกรรมของนักเรียน

แผนการสอนที่ 6
เรื่อง การบริโภคอาหารปลอดภัย
วันที่ 14 สิงหาคม 2545 เวลา เวลา 14.00 – 15.00 น.

วัตถุประสงค์เชิงพฤติกรรม

เพื่อให้นักเรียนบอกถึง อาหารที่ถูกหลักโภชนาการและ อาหารที่ไม่ถูกหลักโภชนาการ

กลุ่มเป้าหมายหลัก

นักเรียนชั้นประถมศึกษาปีที่ 6 โรงเรียนเทศบาล 3 อ.เมือง จ.ปราจีนบุรี

แนวคิดหลัก

เมื่อนักเรียนมีความรู้เกี่ยวกับ อาหารที่ถูกหลักโภชนาการและ อาหารที่ไม่ถูกหลักโภชนาการ นักเรียนสามารถตัดสินใจเลือกรับประทานอาหารที่ถูกหลักโภชนาการและเหมาะสมได้

กิจกรรมและวิธีดำเนินการ

การบรรยายให้ความรู้ เกี่ยวกับการบริโภคอาหารปลอดภัย โดยใช้ ภาพพลิก เอกสาร โปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข แบ่งกลุ่มและอภิปรายกลุ่มเกี่ยวกับอาหารที่ถูกหลักโภชนาการและ อาหารที่ไม่ถูกหลักโภชนาการ ร่วมกันสรุปความรู้ที่ได้รับจากการแบ่งกลุ่ม ร่วมกับ วิทยากรจากเทศบาลเมืองปราจีนบุรี และสำนักงานสาธารณสุขจังหวัดปราจีนบุรี

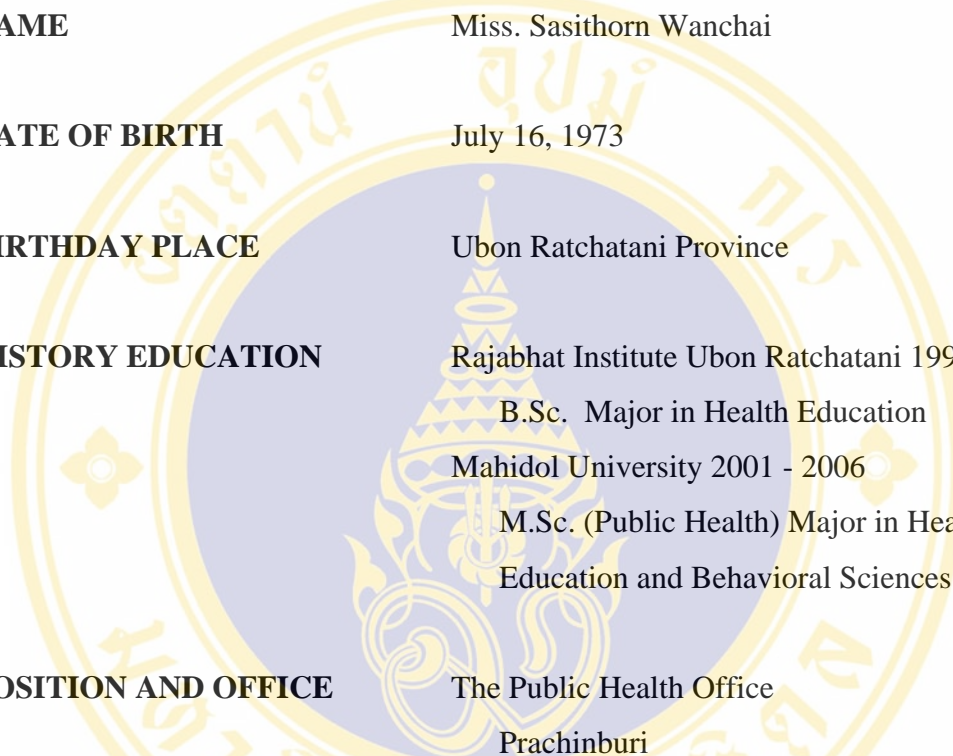
วัสดุ อุปกรณ์

ภาพพลิก เอกสาร โปสเตอร์ แผ่นพับ ของกระทรวงสาธารณสุข เกี่ยวกับการบริโภคอาหารปลอดภัย ไมโครโฟน เครื่องเสียง

การประเมินผล

จากการสังเกตและการมีส่วนร่วมในกิจกรรมของนักเรียน

BIOGRAPHY



NAME	Miss. Sasithorn Wanchai
DATE OF BIRTH	July 16, 1973
BIRTHDAY PLACE	Ubon Ratchatani Province
HISTORY EDUCATION	Rajabhat Institute Ubon Ratchatani 1993 - 1995 B.Sc. Major in Health Education Mahidol University 2001 - 2006 M.Sc. (Public Health) Major in Healthy Education and Behavioral Sciences
POSITION AND OFFICE	The Public Health Office Prachinburi