



**PERCEPTIONS OF BARRIERS TO REDUCE
WEIGHT OF OVERWEIGHT AND OBESE
ADULTS IN BANGKOK**

BY

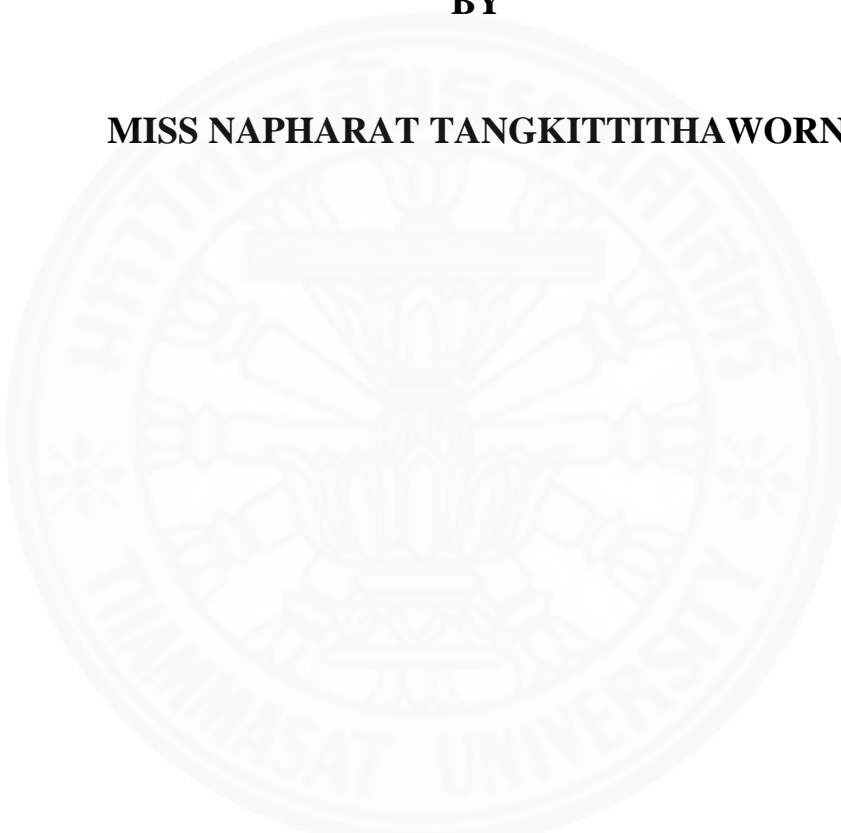
MISS NAPHARAT TANGKITTITHAWORN

**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL
FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE PROGRAM IN MARKETING
(INTERNATIONAL PROGRAM)
FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
ACADEMIC YEAR 2016
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INDEPENDENT STUDY

BY

MISS NAPHARAT TANGKITTITHAWORN

ENTITLED

PERCEPTIONS OF BARRIERS TO REDUCE WEIGHT OF OVERWEIGHT AND
OBESE ADULTS IN BANGKOK

was approved as partial fulfillment of the requirements for
the degree of Master of Science Program in Marketing (International Program)

on..... 8 MAY 2017

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Independent Study Advisor	Professor Kenneth E. Miller, Ph.D.
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ABSTRACT

Excess weight and obesity are considered to be serious health problems in Thailand with the rate of death around 20,000 people a year because of comorbidity such as cholesterol, diabetes, hypertension, cardiovascular disease, joint and bone problems, etc.

Thailand is in the second place in term of the prevalence of obesity in Asean and ranks in the top five among all countries in Asia. One-third of Thais are overweight and one-tenth of Thais are obese. It is possible that half of the population will be overweight in the coming years.

This study is a contemporary topic in applied marketing on a health and society issue. It aims to help both government and private sector by providing insights and understanding. From the result of this study, the food industry can develop better products, services and campaigns that attempt to solve consumer weight problems, cure pain points and improve the quality of consumer's lives. Also, the government can use this information to develop their plans along with the execution of these plans. The objectives of this study are to understand food consumption behaviors, attitudes and current problems of overweight people in order to see at which stage they have the most obstacles to lose weight as well as to determine the factors that affect their behaviors and lifestyles.

Keywords: Obesity, Overweight, Weight loss, Adult in Bangkok, Dietary



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CHAPTER 1

INTRODUCTION

1.1. Introduction to the study

Nowadays more Thai people become overweight and the reasons are mainly from their eating behaviors and lifestyles. Thai government found that one-third of Thais are overweight and one-tenth of Thais are obese which is the first step that can lead to many non-communicable diseases afterwards and death. Most overweight people are unaware that they are in this situation. This is a big problem since self-awareness is an important first step to change an individual behavior.

Overweight people have a hard time losing weight due to hectic lifestyles and living environments which affect their food consumption patterns. Attitudes and one's mind play a major role in blocking individuals from successfully losing weight. People believe that they have more control over their behaviors than they really do. Actually, there are a level of stress, anxiety and addiction which can limit the conscious control that one has over his or her choices.

The government has done many campaigns over the past five years but the results are still not good enough. Although some are aware of their overweight problem, they find that it's hard to change the behaviors because of the hectic lifestyles and living environments which affect their food consumption patterns. Even though some groups of people have acknowledged and taken actions to lose weight, most of them are struggling.

1.2. Research Objective

This study aims to understand the barriers to lose weight of the people who are overweight and obese and to provide insights and help the government and private sector to tackle and solve this problem effectively. The research objectives of this study are as followed.

- To measure overweight people's self-awareness on their obesity and their acceptance that it is a real problem
- To understand attitudes of overweight people towards obese problems

- To understand their attitude towards the problem and how they overcome them
- To understand their perspective during weight control programs
- To understand food consumption behavior and attitudes towards current eating habits and lifestyles
- To determine the key factors that prevent obese people from changing their behavior and lifestyles
- To identify the factors that made them aware of their obesity problems
- To identify the most struggle stage of losing weight
- To define the reasons behind the obstacles to lose weight at each stage of weight loss
 - Stage1 :Kick off
 - Stage2 :Early stage
 - Stage3 :For a while stage
 - Stage4 :Result maintaining stage

CHAPTER 2

REVIEW OF LITERATURE

Overweight and obesity mean “abnormal or excessive fat accumulation that presents a risk to health”. Body Mass Index, weight in kilograms divided by the square of the height in meters (kg/m^2), is an indicator to identify overweight and obesity ranges. People who have BMI equal or greater than 25 are called overweight and those that have BMI equal or more than 30 are called obese. This is suitable for American or European body composition. (World Health Organization, 2011) However, the cut-off BMI values for Asian is different. According to Shimane University School of Medicine in Japan, a BMI of 23 is the cut-off point for Asian. People are categorized into 3 following groups; between 23 and 24.9 BMI as overweight, 25 to 29.9 BMI as Obese1, and over 30.0 BMI as obese2. (See appendix a)

Overweight and obesity are considered as a serious health problem in Thailand with the rate of death around 20,000 people a year because of comorbidity such as cholesterol, diabetes, hypertension, cardiovascular disease, joint and bone problems, etc. Overweight people have 2-3 times higher risk of being comorbidity than normal people. (Ministry of Public Health, 2014)

Thailand, currently, is the second place in term of prevalence of obesity in Asean and ranks in the top five among all countries in Asia. (See appendix b) One-third of Thais are overweight and one-tenth are obese. It is possible that half of population will be overweight in the coming years. (Dr. Gerard Lalande, 2016)

Most overweight people are unaware that they are in this situation. This is a big problem since self-awareness is an important first step to change individual behavior. (Thai Health Promotion Foundation, 2014)

The problem of excess weight occurs in both children and adults. In the past five years, the rate of obesity in pre-school increased from 5.8% to 7.9% while the figure rose from 5.8% up to 6.7% in school-age children. These statistics illustrate the growth rates of 36 percent for pre-school age and 15 percent for school age, respectively. For young adult aged between 20 to 29 years old, the figure increased 36% among men and 47% among women. (Pavintra Harinsoot Somnuek, 2013)

Obese people usually know how they should behave to lose their weight. However, few people can follow their plan and did it until they succeed. (Mark Yonug, 2016) Excess weight and obesity are mainly from eating too many calories and lack of physical activity which makes an energy imbalance (World Health Organization, 2011). In Thailand, there are causes of obesity. The main reason is the hectic pace of modern lifestyle which affects a changing in dietary and activity. For example, people are eating more fast foods and processed foods which contain a lot of fats but lack nutrition. Moreover, people don't have time to exercise but rather sit at home and watch television or surf the internet (Dr. Pavintra Harinsoot Somnuk, 2013), especially in Bangkok which has the highest rate of obesity at 44.6%. (Diabetes Association of Thailand) (See appendix c) Another important behavior is people consume more sweets such as dessert and soft drink. (Luis Garrido-Julve, 2014) Furthermore, the study shows that obesity usually occurs among urban people who have higher income than those who live in the countryside. (Bahar Karaman, 2014) Finally, their mind plays a key role in blocking people from successful weight loss. People believe that they have more control over their behaviors than they really do. Actually, some levels of stress, anxiety and addiction can limit the conscious control they have over their choices. Logic is not the thing that drives behaviors. In contrast, brain biochemistry, habits and addiction, states of consciousness and what we see people around us doing are actually the key drivers. People are emotional beings with the ability to rationalize. (Carole Carson, 2011)

CHAPTER 3

RESEARCH METHODOLOGY

The research was conducted by using 2 research designs which are exploratory research and descriptive research. The target respondents are adults who live in Bangkok aged between 23 and 60 years old and have BMI equal or greater than 23. Screening questions were applied to select the respondents.

3.1. Exploratory Research

3.1.1. Secondary data

Secondary data was conducted to find an overview of obesity problem in Thailand by understanding the magnitude of the obesity problem and the causes such as lifestyle and behavior. In addition, the finding of BMI indicator was used to categorize people into sub-groups among their level of obesity. The data was obtained from government and non-profit organization websites, published journals, researches and other credible sources. This information was the base data that helps designing the in-depth interview questions.

3.1.2. In-depth interview

In-depth interview was conducted with the purpose of gaining a deep understanding of overweight and obesity adults about their behaviors, lifestyles and attitudes toward their problem. The key questions were focused on obstacles for losing weight. All respondents were adults aged 23 to 60 years old who live in Bangkok and has BMI equal or greater than 23. Pre-test respondents were 3 respondents. Total numbers of respondents were 12 in this stage.

3.2. Descriptive Research

The purpose of descriptive research is to describe the characteristics of overweight and obese adults and measure attitudes, behaviors and factors that prevent obese people from losing weight. Survey questionnaire was conducted to collect data. The result obtained through exploratory research was applied as a guideline for the survey questionnaire design. Pre-screening questions were asked to select qualified

respondents. The questionnaire was divided into 5 parts; which are Food consumption behavior, Attitudes and perceptions toward weight loss, Barriers for weight control, Personal behaviors and lifestyles, and Demographic section. Pre-test respondents include 10 respondents. Both online and offline channels were used to distribute the questionnaire. Online channel was the main way to recruit respondents while offline survey had helped to cover people who aged over 40 years old. Total number of respondents is 106 people.

3.3. Sampling plan

The target respondents are adults who live in Bangkok aged between 23 and 60 years old and have BMI equal or greater than 23. The respondents are diverse in gender, age, income and education to avoid the similar results and can generalize to represent the population.

3.4. Identification of research variables

The variables from the questionnaire were categorized into 5 main sections as follows

- **Respondent's profile**

Questionnaire method: Multiple choice

- **Respondent's attitude towards weight control**

Questionnaire method: Likert scale

- **Respondent's key factors and barriers that affect weight control**

Questionnaire method: Likert scale, multiple selection

- **Respondent's food consumption behavior**

Questionnaire method: Multiple selection

- **Respondent's lifestyle**

Questionnaire method :Likert scale, multiple selection

The conclusion of the results from each questionnaire method comprises of different characteristics of said methods. Likert scale questions were evaluated by means and standard deviations. Multiple choice and multiple selection questions were evaluated by frequencies and ratio. (see questionnaire in appendix d)

3.5. Data Collection Method

According to the research objectives, non-probability sampling (convenience sampling) was used to collect the data. For in-depth interview, the criteria to collect samples are age ranges, genders and social status. Twelve people were interviewed in this stage. For the survey, it was distributed through online channel, requesting directly through email and social networks such as Facebook and instant message applications, namely Line and WhatsApps, to people who met BMI criteria, equal or greater than 23. The screening questions were applied to the first part of questionnaire to recruit qualified respondents. Offline survey has helped to cover the respondents that could not be reached by online survey, for example, adults aged over 40 years old.

3.6. Data Analysis Plan

The gathered data was analyzed based on the variables that have been set above. The analysis on in-depth interview was mainly focused on the insight of respondents, which helps developed and verified the quantitative survey. As for the questionnaire, the survey was screened and checked for error and then coded and edited as necessary to ensure more accuracy before using SPSS program (Statistical Package for the Social Science) to analyze data. Mode and mean were used to identify the center value of the data which helped summarize the quantitative data. The mean comparison, t-test and ANOVA were used to find the differences between segments of the respondents, such as demographics, BMI, lifestyles and behaviors. The cross tabulation was used for summarize the results of the survey. This program helped to analyze the variances and focus on frequencies and means, correlations between variables, and other appropriate statistical analysis which will make it easy for readers to understand the result of the study.

3.7. Limitation of the Study

Due to limited time and resource, this sample size may not cover all types of adult in Bangkok. The small sample size might make it inappropriate to use this study to proof or support business decisions. Therefore, the further quantitative study may require to generalize more data and represent the entire population.



CHAPTER 4

RESULTS AND DISCUSSION

4.1. Secondary Research Key Findings

4.1.1. Indicator to identify obesity range

Body Mass Index is the indicator to identify obesity level. It can be calculated by using weight in kilograms divided by the square of the height in meters (kg/m²). According World Health Organization, it defines that people who weight equal or greater than 25 BMI are called obese. Since physical body is varied among many countries, WHO's BMI may not represent all countries around the world. In Thailand, BMI cut-point is different from that of global scale. According to Shimane University School of Medicine in Japan, 23 BMI is the most suitable cut-point for Asian size. People are categorized into 3 groups; between 23 and 24.9 BMI as overweight, 25 to 29.9 BMI as obese1, and over 30.0 BMI as obese2.

4.1.2. Obesity situation in Thailand

Overweight and obesity are considered a serious health problem in Thailand with the rate of death around 20,000 people a year because of comorbidity, according to Ministry of Public Health. Thailand, currently, is the second place in term of prevalence of obesity in Asean and ranks in the top five among all countries in Asia. One-third of Thais are overweight and one-tenth are obese. It is possible that half of population will be overweight in the coming years. The area that has the highest rate of obesity at 44.6% is Bangkok.

4.1.3. Attitudes and Behaviors of Obese People

Most of overweight people don't know their problems in the first stage. It takes time before they are aware of the problem. Although they recognize the problem and know how they should behave, few people can follow their plan and do it until they succeed. The main reasons of failure are from eating too much and lack of physical activity which causes an energy imbalance. In urban area, the main reason is from fast-paced lifestyle which affects a changing in dietary and activity. People don't eat at a proper time and have less time to exercise. Due to hectic lifestyle, it also

affects people mood and feeling such as stress, sad, anxious etc. which lead to more consumption as a mean to make themselves happy.

4.2. In-Depth Interview Results

The objective of in-depth interview is to explore general eating behaviors and lifestyles and understand their attitudes, motivation and perceptions toward obese problems. All interviews were conducted during 10-31 January 2017. Twelve interviewees all have BMI of equal or greater than 23 and live in Bangkok. The respondents were 6 females and 6 males, evenly split in gender. Over half of participants are adults, aged between 26 – 35 years old. Respondents were recruited from various backgrounds like education, income, occupations etc.

Regarding the overweight awareness, all of respondents mentioned that they are highly aware that they are facing the overweight situation and it is a big problem in their lives since it really impacts them in term of health, especially when they get older.

Speaking of “weight loss”, all respondents think of food consumption control, exercise, calorie control, carb reduction and healthy and clean eating as the most effective ways. Most of them said they are interested in losing weight. Half of respondents said that their motivation of weight loss is that they want to dress up and look good while some of them want to have a good health, especially a group that has high BMI and a group of adults who aged over 40 years old. However, it turns out that only 2 out of 12 are currently on weight control program.

Attitude is the first step that blocks them from succeeding and it plays the key role since it leads to action. More than half of interviewees think that it is hard to lose weight. This strong belief mainly comes from their “past experience” when trying to lose weight. They perceived it as “tolerant moment” because they need to change many behaviors, for example, eating food that is tasteless, getting exhausted from exercise which leads to less energy and unpractical to do other things and also having to sacrifice personal time or happy moments with friend or other favorite activities. Since it requires a lot of efforts, it is perceived as a hard experience. In contrast, the rest of respondents think that it is not hard but they have never tried that hard since weight loss is not their priority. Furthermore, 7 out of 12 think that exercise for losing

weight is a boring activity since it has to be consistent and needs to be done by yourself as it is hard to involve others.

Fast-paced lifestyle is another factor that prevents them from weight loss. All interviewees mentioned that time is a big condition for an urban life. If they want to exercise, it probably takes at least an hour or two hours to travel from place to place, not including the time required to travel back home. It is too exhausted and a waste of time because, starting in the morning, they need to wake up early before taking 1-2 hours to get to work. So, if they go exercise, the total travel time would be 3-4 hours per day. Moreover, 7 out of 12 said that they rarely have time to exercise due to their work-load. However, when asking about their daily life, 9 out of 12 said that they spend time at night on their cell phone, play games, surfing internet or watching movie about 1-2 hours before go to bed.

In term of behaviors, there are many common habits that lead the respondents to overweight problem. Laziness is the top factor agreed by all respondents. Half of respondents said that it is an effect from hectic lifestyle which makes them too tired and want to relax. Some of them said that they have other things that they want to do more than exercise. It can be concluded that they need some personal time for enjoyable moment. Second, procrastination is the key barrier of weight loss. By asking the reason, the result shows that 75% of respondent think that it relates to laziness, 58% mentioned that there are some situations blocking them to start losing weight such as hanging out with friends, working or travelling on trips and etc. Last but not least, it is the eating behavior. Almost all of the interviewees think that the main reason of overweight is eating too much. Half of them want to eat more variety of food so they always order many dishes and try to finish all even if they are full. Most of them often skip breakfast and eat late dinner due to time constraint. While they work, they like to eat to keep them awake and they feel that eating helps releasing stress. The top activity that they always do with friend and family is eating. Most of the time is buffet. Half of respondents found that it is hard to reject their friends or family because they don't want to be a fun killer even if they are on the process of weight loss.

From the interview, it can be categorized into 4 stage of weight loss, namely, Kick off (process before start losing weight), Early stage (at the beginning of weight

loss), For a while stage (after continue on weight loss process for a while) and Result maintaining stage (the stage of maintaining the weight). The most difficult stage of weight loss is the “Kick off” stage because of their laziness and procrastination, said by five respondents. Followed by the “Early stage”, which three of respondents think that it is very hard to get through the first week because it is too exhausted and they are not familiar with this changing in behaviors. Two respondents think that “Result maintaining” is the most challenge stage because, for long term result, they need more disciplines than other stages. “For a while” stage is answered by the rest of respondents because they feel that it is hard to exercise regularly.

4.3. Result from descriptive research: Survey

4.3.1. Respondent profile

Data was collected from 108 respondents which 31% are males and 69% are females aged between 18 - 60 years old who live in Bangkok and have BMI equal or greater than 23, the range of overweight and obesity. Other demographic factors varies to cover various types of respondents. This profile helps the generalization to represent the entire population of target group more accurate. The respondents’ demographic details are shown in appendix e.

The respondents are categorized into 3 groups of BMI ranges, which are 23-24.9 BMI called Pre-obese, 25.0-29.9 BMI as Obese1 and BMI equal or over 30 as Obese2. The table below shows the proportion of respondents in each BMI group.

Table 4.1: Group of BMI range

		Count	Percent
BMI	30.00+	22	20.4%
	25.00 - 29.99	45	41.7%
	<= 24.99	41	38.0%

Regarding body shape satisfaction and awareness of overweight problem, the results shows that all of respondents are dissatisfied with their shape (mean = 2.1/5) and highly agreed that they are facing the overweight problem (mean = 4.2/5). (see in appendix f)

Table 4.2: Way to recognize overweight problem

		BMI Groups					
		More than 30		25.00 - 29.99		23.00-24.99	
		Count	Percent	Count	Percent	Count	Percent
Way to recognize overweight problem	Noticed by others	9	40.9%	23	51.1%	25	61.0%
	Cannot wear clothes	11	50.0%	29	64.4%	26	63.4%
	Easy to get exhausted	10	45.5%	17	37.8%	9	22.0%
	Health problem	9	40.9%	15	33.3%	6	14.6%
	Weight measure	18	81.8%	33	73.3%	20	48.8%
	Others	1	4.5%	3	6.7%	4	9.8%

Pearson Chi-Square Tests

		BMI Group
Way to recognize overweight problem	Chi-square	23.744
	df	12
	Sig.	.022*

From table 4.2, there is an association between BMI groups and the ways to recognize their overweight problem at p-value = 0.022 (Chi-square = 23.744, d.f. = 12). “Pre-obese” group recognizes the overweight problem by unable to wear their clothes (64.4%) and noticed by others (51.1%) while “Obese1 and Obese2 group” mainly recognized their problem by monitoring their weight and followed by unable

to wear their clothes. Another observation from the result shows that the higher BMI level, the more they recognized the overweight problem by health issue.

4.3.2. Meal and food consumption behavior

There is no association between BMI groups and biggest meal consumption in the day [Chi-square 4.919, d.f. 8, p-value 0.766). All BMI groups consume dinner as their biggest meal (39.8%) follow by lunch (34.2%), breakfast (19.4%) and extra meal (5.6%). (See in appendix g-1)

Over 56.5% of respondents consume extra-meal (snack, dessert). When asked about when do you consume an extra meal, 70.4% of respondents consume extra meal between lunch and dinner, 25.9% of respondents consume extra meal at night, 22% of respondents consume extra meal between breakfast and lunch and only 12% of respondents do not consume an extra meal. (See in appendix g-2)

The table below shows the summary of reasons behind the extra meal consumption. 41.7% of respondents said that they consume because they “Just want to eat something” which is the same percentage with the “Little hungry” reason, followed by Craving for snacks, Eat while working or reading, Need to consume dessert after main meal, Want to eat fruit after meal with the percentage of 33.3%, 32.4%, 27.8% and 20.4%, respectively.

Table 4.3: Reason why consume extra meal

	Count	Percent
Just want to eat	45	41.7%
To fulfill my stomach before main meal	12	11.1%
Want to eat something when working or studying	35	32.4%
Craving for snack	36	33.3%
Divide the main meal into multiple small meal	45	41.7%
Need some dessert after main meal	3	2.8%
Need some dessert after main meal	30	27.8%
Need some fruit after main meal	22	20.4%
Others	3	2.8%

By considering the time that respondents normally have dinner, it is found that there is no significant association between BMI groups and dinner time [Chi-square 10.779, d.f. 10, p-value 0.375]. However, the data from observation shows that the high BMI groups tend to have dinner later than low BMI groups. (See in appendix g-3)

Regarding favorite dishes, there is no association with BMI groups [Chi-square 38.092, d.f. 28, p-value 0.097] (see in appendix g-5). The figures show that 64.8% said they love grilled food, followed by deep fried food at 60.2 and meat lover at 57.4%. (see in appendix g-6)

Table 4.4: Sleeping hour

	Count	Percent
Less than 6 hours	59	54.6%
More than or equal to 7 hours	49	45.4%

From the table 4.4 , there is over 54.6% of the respondents who sleep less than 6 hours which it is one of the obesity causes.

4.3.3. Interested to lose weight

95.4% of respondents are interested to lose weight while only 4.6% are not interested. However, the conversion rate reduced by 24.1% from “interest to lose weight” stage to “action” stage. There are 71.3% of respondents on progress of losing weight while 28.7% said they are not. This means that respondents who are interested to lose weight are not actually taking an action. (See in table 4.5 and 4.6)

Table 4.5: Interested to lose weight

	Count	Percent
Interested	103	95.4%
Not interested	5	4.6%

Table 4.6: Currently on the process of weight lose

	Count	Percent
Yes	77	71.3%
No	31	28.7%

4.3.4. Reason to lose weight

The associate between BMI groups and reasons to lose weight are significant, p-value = 0.02 (Chi-square 29.56, d.f. 16). The results for each group are explained as following.

- Pre-obese group wants to lose weight because they want to have a better health (65.9%), be more confident (51.2%), have a better shape (48.8%) and look good (41.5%).
- Obese I group wants to lose weight to have a better health (80%), look good (57.8%), better shape (37.8%), easy to dress up (35.6%) and be more confident (33.3%).
- Obese II group wants to lose weight because they want better health (100%), to look good and be more confident (45.5%), and easy to dress up (31.8%).

The result shown in table 4.7

Table 4.7: Reason why people interest to lose weight

	BMI groups					
	More than 30		25.00 - 29.99		23.00-24.99	
	Count	Percent	Count	Percent	Count	Percent
Better health	22	100.0%	36	80.0%	27	65.9%
Easy to dress up	7	31.8%	16	35.6%	15	36.6%
Want to look good	10	45.5%	26	57.8%	17	41.5%
Want to have good shape	3	13.6%	17	37.8%	20	48.8%
Feel more confident	10	45.5%	15	33.3%	21	51.2%
Be able to go travel	3	13.6%	1	2.2%	2	4.9%
More Attractive/want to have boy/girl friend	1	4.5%	3	6.7%	3	7.3%
Others	1	4.5%	1	2.2%	0	0.0%

	BMI Groups
Chi-square	29.554
df	16
Sig.	.020 ^{*,b,c}

4.3.5. Perception of the most effective ways to lose weight

Regarding the questions about effective ways to lose weight, all of BMI groups believe that working out is the most effective way to lose weight (66.7%), followed by calories control (41.7%), cardio workout (39.8%), consume less (31.5%), eat clean food (28%), reduce carbohydrate food (28%) and weight lifting (19%). (see in table 4.8)

Table 4.8: Top 3 effective ways to lose weight

	Count	Percent
Skip meal	5	4.6%
Eat less food	34	31.5%
Workout	72	66.7%
Cardio workout	43	39.8%
Weight lifting	20	18.5%
High intensity exercise	2	1.9%
Yaga	1	0.9%
Eat clean food	30	27.8%
Calories control	45	41.7%
Reduce carbohydrate	29	26.9%
Reduce fat	15	13.9%
Take medicine	2	1.9%
Supplementary	1	0.9%
Surgery	1	0.9%
Others	2	1.9%

4.3.6. Current way to lose weight

Top 5 ways that respondents from all BMI groups currently use are workout (39.8%), reduce food consumption (38.0%), reduce carbohydrate food (23.1%), cardio workout (22.2%) and calories control (20.4%). (See in table 4.9)

Table 4.9: Current way to lose weight

	Count	Percent
Skip meal	5	4.6%
Eat less food	41	38.0%
Workout	43	39.8%
Cardio workout	24	22.2%
Weight lifting	8	7.4%
High intensity exercise	2	1.9%
Yaga	6	5.6%
Eat clean food	12	11.1%
Calories control	22	20.4%
Reduce carbohydrate	25	23.1%
Reduce fat	9	8.3%
Take medicine	0	0.0%
Supplementary	5	4.6%
Surgery	0	0.0%
Others	0	0.0

4.3.7. Attitude towards lose weight

Using t-test to test the difference between mean, the results show that there is a significantly difference of attitude towards lose weight between genders. Females perceived that losing weight is harder than males (p-value = 0.00) and women are lazier than men in term of losing weight (p-value = 0.01). Moreover, more females disagreed with the statement of “they are overweight but it is not a big problem” (p-value 0.01) than males do. Furthermore, more females agreed with the statement that “they do not have a motivation to losing weight” (p-value = 0.01). Lastly, more males disagreed than females on “obesity is from genetic transfer” (p-value = 0.00) and while on losing weight process, they have no time to do activities with friends and family (p-value = 0.01). From observation, both male and female agreed that losing weight will make a better health (mean = 4.69) and think that losing weight is not

hard but they are just lazy (mean = 3.90) Moreover, both genders think that the reason why they do not lose weight are just an excuse (mean = 4.00). (See in appendix h)

4.3.8. Success rate of losing weight

The success rate of people who are currently facing obesity problem can be divided into 5 groups which are “Always succeed”, “Often succeed” (success rate higher than failure rate), “Rarely succeed” (success rate lower than failure rate), “Never succeed” and “Never try to lose weight”. The ratio of each group are 7.4%, 25.0%, 39.8%, 19.4% and 8.3% respectively. When grouped 2 types of failure, “Rarely succeed” and “Never succeed”, it can be concluded that overall failure rate is 59.2%. (See in table 4.10)

Table 4.10: Success rate of weight lose

	Count	Percent
Always succeed	8	7.4%
Often succeed	27	25.0%
Rarely succeed	43	39.8%
Never succeed	21	19.4%
Never try to lose weight	9	8.3%

There is an association between success rate and barriers of weight loss [Chi-square 81.588, d.f. 56, p-value 0.014]. Comparing “barriers of weight loss” with “success rate of losing weight”, “Always succeed” group is the most struggling with tiredness from study or work (62.5%), followed by having no time (50.0%) and craving for food (37.5%). For “Often succeed” group, their key challenges are unable to do continuously (48.1%), laziness (44.4%) and tiredness from study or work (40.7%). The main problems blocking “Rarely succeed” groups from successful weight loss are laziness (69.8%), cannot do continuously (44.2%) and craving for food and tiredness from study or work (32.6%). For “Never succeed” group, the big

problems are laziness (66.7%), slowly see the result (66.7%) and cannot do continuously (38.1%). (See in appendix J)

4.3.9. Reason not start to lose weight

There are 6 variables which significantly difference between genders in the topic of reason not to start to lose weight. First, females are more procrastinated to start weight loss program than males (p-value = 0.015). Second, losing weight is harder for females than males (p-value = 0.006). Third, males are disagree more than females with the statement of losing weight create stress and suffer (p-value = 0.039). Fourth, the statement of cannot eat their favorite food is agreed by females more than males (p-value = 0.037). Fifth, female has more problem about the taste of clean food than males (p-value = 0.002). Lastly, males is disagreed that losing weight is impossible to do more than females (p-value = 0.011).

The results can also be explained that laziness is the biggest barrier of weight loss for both males and females (mean = 4.12/5), followed by tiredness from work (mean = 3.91) and not being in their priority (mean = 3.86). (See in appendix k)

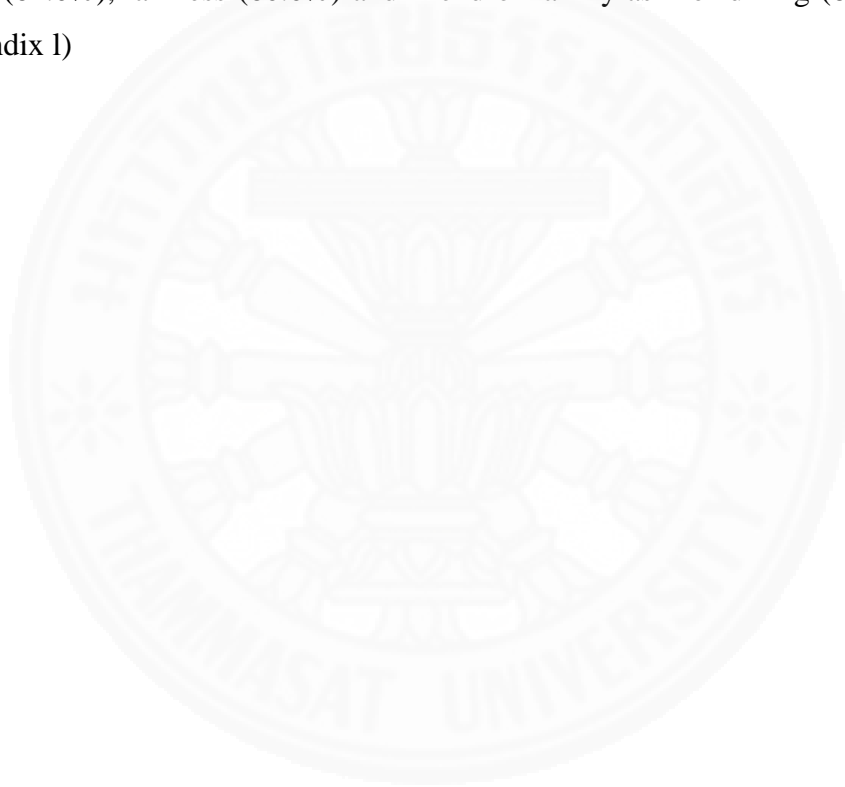
4.3.10. Barrier to lose weight in each stage

According to in-depth interviews, there are four stages of weight loss which are “Kick off”, “Early stage”, “For a while” and “Result maintaining” stages. The most difficult is “Kick off” stage mentioned by 35.2% of respondents. Some of respondents (30.6%) think that the “Early stage” is the most difficult. While the rest of respondents think that “Result maintaining” and “For a while” stage is the most difficult. (See in table 4.11)

Table 4.11: The most difficult stage of weight lost

	Count	Percent
Others	3	2.8%
Kick off	38	35.2%
Early stage	33	30.6%
For a while	9	8.3%
Result maintaining	25	23.1%

Top 2 boxes analysis is used to analyze the barriers in each stage of weight loss. The result of “Kick off” stage shows that laziness is the biggest barrier (78.9%), followed by cannot do it continuously (76.3%), craving for food (71.1%) and tired from study or work (71.1%). For “Early stage”, the barriers of both laziness and cannot do it continuously are the biggest barrier with the same ratio (78.8%) and followed by craving for food (63.6%). Then, “For a while” stage, the top 2 barriers are the weight loss result is slowly shown up (77.8%) and tired from study or work and have no time (66.7%). Last stage is “Result maintaining”. The key barriers are tired from study or work (64.0%), laziness (60.0%) and friend or family ask for dining (60.0%). (See in appendix 1)



CHAPTER 5

SUMMARY AND CONCLUSION

Not proper behaviors

Eating behavior is the most important factor of weight control according to many medical journals. It is the basis of weight loss process. The result of the survey can be explained that respondents have the wrong eating behaviors; for example, they like to consume extra meals, consume dinner as the biggest meal and have late dinner. Their favorite choices of foods such as grilled food and deep fried also lead to higher weight. Over half of respondents also sleep less than 6 hour which causes an imbalance metabolism.

Nowadays government has many communication campaigns about the ways to lose weight. Those campaigns are mainly talking about workout and drawbacks of overweight problem but lack of basic knowledge like proper food consumption. Therefore, government should also communicate about eating behavior which is the basis that people can suddenly start changing. Regarding extra meal results, 56.5% of respondents like to consume snacks or desserts as extra meal, however, there are currently few options of healthy snacks in the market so it is an opportunity for private sector to consider about it.

From perception to real action

According to survey results, it shows that respondents believe top 3 most effective ways to lose weight are workout (67%), calories control (42%) and cardio workout (40%). However, when it comes to an action, top 3 actions that overweight people usually do are workout (39.8%), reduce food consumption (38.0%) and reduce carbohydrate food (23.1%) which are not the right way to behave. It can be proof from 59.2% failure rate of respondents. From these results, it is questioned that are overweight people really understand about the right methods of losing weight. So, government need to focus more on educate the knowledge because the most campaign are mainly create an awareness but it doesn't give much details yet. Private sector can also use it as a communication campaign to create fear of wrong methods and provide

the right way by its own service as a solution. With the right information, it also helps to create credibility or expert image for the business.

Laziness, the key barrier that make people don't get start

The respondents are aware of their overweight problem and over 90% of them are interested to lose weight in order to have a better health but it turns out that only.....% are actually on the process of weight control. The success rate is around 40%.

The most difficult barrier is "Laziness", which happens among all categorized groups such as genders, success rate groups, BMI groups and stage group. This barrier is much more impact to females who are lazier, think of weight loss as hard to do, lack of motivation and more procrastinate than males. It imply that females have a hard time to lose weight than males so it is possible that there are a bigger opportunity in females market for business to design products and services to serve their need.

In addition, "Kick off" stage is the most challenge stage. The results also show that failure rate happens more in the stage of "Kick off" and "Early stage". The reason in these stages is still the same reason from laziness. By considered this behavior, the businesses should design products or services that take less effort to do or easy to access, for example, 5 minutes workout DVD, delivery food, trainer at home service.

This is a top challenge since laziness is based on personal behavior and attitude. It is very interested to do further research on reasons that affect the level of laziness and find what their motivations to across this problem which possibly benefit for new business ideas, activity or communication campaign for both government and private sector.

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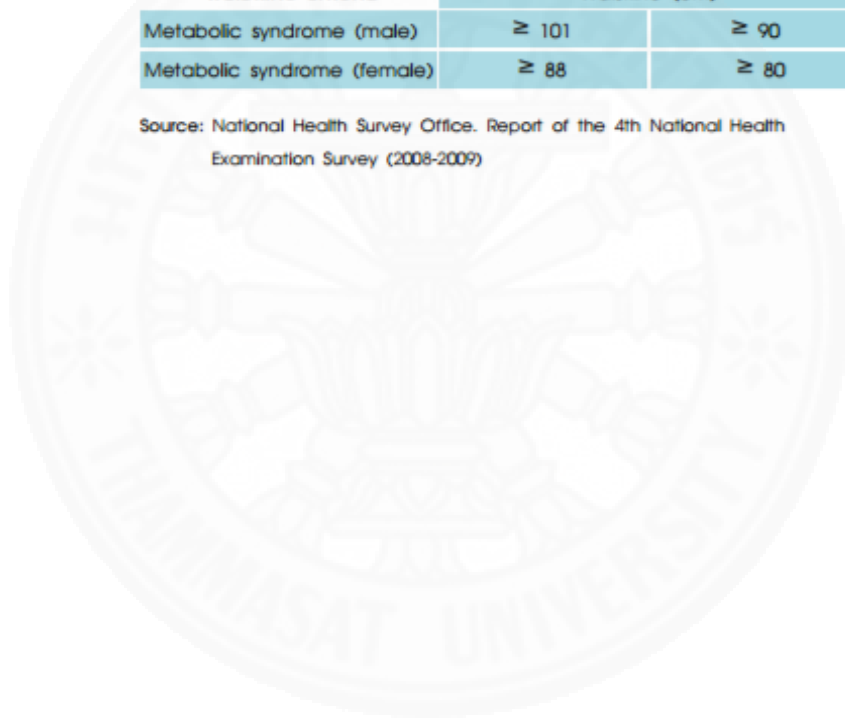
APPENDIX

APPENDIX A

BODY MASS INDEX

How to identify obesity and "metabolic syndrome"		
Body weight criteria	International criteria	Asia-Pacific criteria
	BMI (kg/m ²)	
Underweight	< 18.5	< 18.5
Normal	18.5-24.99	18.5-22.99
Overweight	≥ 25	≥ 23
Borderline obese	25-29.99	23-24.99
Obese	≥ Over 30	≥ Over 25
Waistline criteria	Waistline (cm)	
Metabolic syndrome (male)	≥ 101	≥ 90
Metabolic syndrome (female)	≥ 88	≥ 80

Source: National Health Survey Office. Report of the 4th National Health Examination Survey (2008-2009)



APPENDIX B

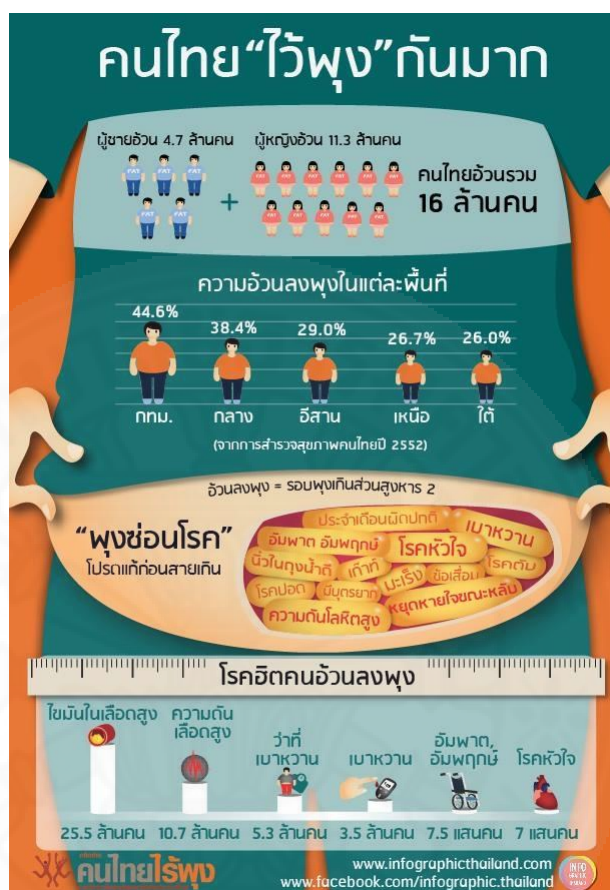
THE PERCENTAGE OF OVERWEIGHT AND OBESE PEOPLE IN ASEAN

According to the chart, it shows that 32% of Thai are overweight and it rank in the second place among all countries in Asean.



APPENDIX C

OBESITY IN THAILAND



Source: <http://www.dmthai.org/statistic/105>

From the info graphic, it illustrates the figures of overweight people in Thailand. Around 16 million people are overweight. The study shows that there are 4.7 million people in men and 11.3 million people in women. Furthermore, the figures of overweight people in each area are shown in the picture. The highest portion of obese people among all regions in Thailand is Bangkok at 44.6%, followed by middle part of Thailand at 38.4%. South region is the lowest percentage at 26%. In addition, overweight people tend to be comorbidity such as cholesterol, hypertension, diabetes and cardiovascular disease.

APPENDIX D

SURVEY QUESTIONNAIRE

Screening question

1. Do you live in Bangkok metropolitan area?
 - a. Yes
 - b. No (end of questionnaire)
2. Are you satisfied with your body shape?

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1	2	3	4	5

3. Do you agree with the following statement?

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
I'm currently facing the overweight problem	1	2	3	4	5

4. Please specify your BMI (BMI calculation: <https://goo.gl/DbUhtC>)
 - a. BMI _____
 - b. I don't know my BMI and want to give the information of weight and height instead
 - i. Weight _____
 - ii. Height _____

Section1: Food consumption behavior

1. What meals do you normally consumed on a typical day?
 - a. Breakfast
 - b. Lunch
 - c. Dinner
 - d. Extra meal
2. Which meal is the most food consumed?

- a. Breakfast
 - b. Lunch
 - c. Dinner
 - d. Late night
 - e. Other, please specify_____
3. Do you eat between meals (Breakfast, Lunch, Dinner)?
- a. I don't eat between meals (skip to q.5)
 - b. Between Breakfast and Lunch
 - c. Between Lunch and Dinner
 - d. Late night
 - e. Other, please specify_____
4. Why do you consume extra meal?
- a. Just want to eat
 - b. To fulfill my stomach before main meal
 - c. Want to eat something when working or studying
 - d. Craving for snack
 - e. Divide the main meal into multiple small meal
 - f. Need some dessert after main meal
 - g. Need some fruit after main meal
 - h. Other, please specify_____
5. What kinds of food do you like? (multiple selections)
- a. Boiled or steamed food
 - b. Deep fried
 - c. Grill
 - d. Stir fried
 - e. Buffet
 - f. Heavily seasoning/rich flavor/Spicy
 - g. Carbohydrate e.g.. Rice, bread
 - h. Soup
 - i. Oily food
 - j. Dessert/Sweet
 - k. Soft drink

- l. American/Western food e.g. Cheese, pizza
 - m. Meat
 - n. Others, please specify_____
6. Please list your top 3 favorite foods, including desserts and snacks. (required at least one answer)
- a. _____
 - b. _____
 - c. _____
7. What time do you usually have dinner?
- a. Before 6:00 pm
 - b. 6:00 pm to 7:00 pm
 - c. 7:01 pm to 8:00 pm
 - d. 8:01 pm to 9:00 pm
 - e. After 9:00 pm
8. How many hours do you sleep per day? (drop down choice)

Section2: Attitude towards weight loss

9. How do you aware of your overweight problem?
- a. Noticed by others
 - b. Cannot wear clothes
 - c. Easy to get exhausted
 - d. Health problem
 - e. Weight measure
10. What method of weight loss do you **know**? (multiple selection)
- a. Reduce amount of food/Skip meal
 - b. Eat less food
 - c. Exercise
 - d. Cardio exercise
 - e. Weight lifting
 - f. High intensity exercise
 - g. Yoga
 - h. Eat healthy food

- i. Calories control
- j. Reduce carbohydrate
- k. Reduce fat
- l. Medicine
- m. Supplement
- n. Surgery
- o. Other, please specify_____

11. In your opinion, what are the **most effective methods** to lose weight? (Not more than 3 answers)

- a. Reduce amount of food/Skip meal
- b. Eat less food
- c. Exercise
- d. Cardio exercise
- e. Weight lifting
- f. High intensity exercise
- g. Yoga
- h. Eat healthy food
- i. Calories control
- j. Reduce carbohydrate
- k. Reduce fat
- l. Medicine
- m. Supplement
- n. Surgery
- o. Other, please specify_____

12. Are you interested to lose your weight?

- a. Yes (continue q.13)
- b. No (skip to q.14)

13. Why do you interested to lose weight? (Skip to q.15)

- a. Want to have a good health
- b. Easy to dress up
- c. Want to look good
- d. Want to have a good shape

- e. Feel more confident
- f. Be able to travel
- g. More attractive/Want to have boy/girlfriend
- h. Other, please specify_____

14. Why don't you interested to lose weight?

- a. I don't think I have overweight problem
- b. I don't think it is a big problem
- c. I don't care about overweight
- d. It's hard to do
- e. I don't have time
- f. No motivation
- g. Laziness
- h. I have tried many times but failed
- i. My weight is not going to be lose no matter what I do
- j. An effect from friends and family; I need go outside to have lunch and dinner since there is few activity that can do together
- k. Other, please specify_____

15. Have you ever tried to lose your weight?

- a. Yes, and achieved every time (continue q.16)
- b. Yes, and achieved sometime (success more than failed) (continue q.16)
- c. Yes, and achieved sometime (failed more than success) (continue q.16)
- d. Yes, and never achieved (continue q.16)
- e. No (skip to q.17)

16. What method do you **used to do** to lose weight? (skip to q18)

- a. Reduce amount of food/Skip meal
- b. Eat less food
- c. Exercise
- d. Cardio exercise
- e. Weight lifting
- f. High intensity exercise
- g. Yoga
- h. Eat healthy food

- i. Calories control
- j. Reduce carbohydrate
- k. Reduce fat
- l. Medicine
- m. Supplement
- n. Surgery
- o. Other, please specify_____

17. Why don't you tried to lose weight?

- a. I'm just overweight not for long
- b. I don't think I have overweight problem
- c. I don't think it is a big problem
- d. It's hard to do
- e. I don't have time
- f. It's not my priority
- g. Laziness
- h. I don't know what to start
- i. No motivation
- j. I don't have friends or someone to do weight loss program together, such as go exercise, control food choices etc.
- k. An effect from friends and family; I need go outside to have lunch and dinner since there is few activity that can do together
- l. Other, please specify_____

18. Do you agree with the following statement?

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
It's hard to lose weight	1	2	3	4	5
Losing weight is not top priority in my life	1	2	3	4	5
I think my weight is higher than average but it's not that much that I need to lose my weight yet	1	2	3	4	5
It's not hard to lose weight but I'm just lazy	1	2	3	4	5
Losing weight is hard for a lazy person like me	1	2	3	4	5
I have no motivation to lose weight	1	2	3	4	5
I think I will have a better health if I lose my weight	1	2	3	4	5
Losing weight is not necessary for me	1	2	3	4	5
The process of weight loss is boring	1	2	3	4	5
I think I am overweight because of genetic	1	2	3	4	5
To be on the process of weight loss, it blocks me from activity with friends and family such as have dinner	1	2	3	4	5
I don't feel confident if I'm not losing my weight	1	2	3	4	5
I know the right way to lose weight	1	2	3	4	5
I think all reason that block me from losing weight is just an excuse	1	2	3	4	5

19. Currently, are you on the process of losing your weight?

- a. Yes (continue q.20)
- b. No (skip to q.21)

20. Please choose your main methods that you use to lose your weight. (Not more than 3 answers)

- a. Reduce amount of food/Skip meal
- b. Eat less food
- c. Exercise
- d. Cardio exercise
- e. Weight lifting
- f. High intensity exercise
- g. Yoga
- h. Eat healthy food
- i. Calories control
- j. Reduce carbohydrate
- k. Reduce fat
- l. Medicine
- m. Supplement
- n. Surgery
- o. Other, please specify_____

Section3: Barrier for weight control

21. Do you agree with the following statement?

I don't start weight loss program because.....

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
...because I'm not really focused to do it	1	2	3	4	5
...because I'm lazy	1	2	3	4	5
...because I'm tired from work or study	1	2	3	4	5

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
...because I think if I'm doing an exercise, then, it will be too exhausted	1	2	3	4	5
...because I don't have time	1	2	3	4	5
...because of procrastination	1	2	3	4	5
...because it's not my priority	1	2	3	4	5
...because I think it's hard to do	1	2	3	4	5
...because I don't think my weight is over standard that much	1	2	3	4	5
...because I feel stress and feel tolerance when I'm on process of weight loss	1	2	3	4	5
...because I cannot eat the food that I like	1	2	3	4	5
...because I don't where to start	1	2	3	4	5
...because healthy/diet food is less appetite	1	2	3	4	5
...because I don't think I can do it	1	2	3	4	5

22. The following statements are problems or barriers that you have faced when trying to lose weight. How important of these factors affect to the failure of your weight loss?

Statement	Not at all	Somewhat important	Quite important	Very important	Extremely important
The result slowly shown up	1	2	3	4	5
Craving for food while on the process of weight loss	1	2	3	4	5
Procrastination	1	2	3	4	5
No time/Don't have enough time	1	2	3	4	5
Tired from work or study	1	2	3	4	5
Traffic/Travel from place to place eat up the time for exercise	1	2	3	4	5
Friends and family like to invite for lunch or dinner	1	2	3	4	5
Exercise makes me too exhausted and don't have enough energy to do other things	1	2	3	4	5
I don't know where to start	1	2	3	4	5
I cannot keep doing it consistency	1	2	3	4	5
No proper/suitable place for me to exercise	1	2	3	4	5
Diet/Healthy food is not delicious	1	2	3	4	5

Statement	Not at all	Somewhat important	Quite important	Very important	Extremely important
It's hard to find/buy diet/healthy food	1	2	3	4	5
Price of diet/healthy food is expensive	1	2	3	4	5

23. What are the top 3 reasons why you give up trying to lose weight?

- a. The result slowly shown up
- b. Craving for food while on the process of weight loss
- c. Procrastination
- d. No time/Don't have enough time
- e. Tired from work or study
- f. Traffic/Travel from place to place eat up the time for exercise
- g. Friends and family like to invite for lunch or dinner
- h. Exercise makes me too exhausted and don't have enough energy to do other things
- i. I don't know where to start
- j. I cannot keep doing it consistency
- k. No proper/suitable place for me to exercise
- l. Diet/Healthy food is not delicious
- m. It's hard to find/buy diet/healthy food
- n. Price of diet/healthy food is expensive

24. Which stage is the most challenging for weight loss?

- a. Kickoff (the process to convince myself to start)
- b. At the beginning of the process
- c. After continue doing for a while.
- d. The stage of maintaining the result
- e. Other, please specify_____

Section4: Respondent's Behavior and lifestyle

25. Do you agree with the following statement?

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
I like to eat many kind of foods with rice in one meal	1	2	3	4	5
I try to finish all dishes although I'm full	1	2	3	4	5
I like to eat dessert	1	2	3	4	5
I like to drink sweet juice or soft drink	1	2	3	4	5
I like to eat fast	1	2	3	4	5
I often drink alcohol	1	2	3	4	5
I consume foods or snacks although I'm not hungry	1	2	3	4	5
I like to find new place for eating	1	2	3	4	5
I like to deep fried food	1	2	3	4	5
I like to exercise	1	2	3	4	5
I always lay on bed and playing things on my cell phone	1	2	3	4	5
I don't have time to exercise	1	2	3	4	5
I like to eat carb food	1	2	3	4	5
I plan to exercise many times but end up doing nothing	1	2	3	4	5
I like to socialize with my friends and family	1	2	3	4	5

Statement	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
I have a fast paced lifestyle	1	2	3	4	5
I rather controlling my eating than exercise	1	2	3	4	5
I enjoy cooking	1	2	3	4	5
I like to watch cooking or food video	1	2	3	4	5
I eat to help reduce my stress	1	2	3	4	5
I eat when I want to keep myself awake	1	2	3	4	5

26. How does the overweight situation impact to your life?

- a. Health problem
- b. Bad image/personality
- c. Cannot dress up
- d. Not agile
- e. Easy to exhausted
- f. Not confident
- g. Others, please specify _____

27. What is your current weight?

28. How much did you weight one year ago?

29. How much to you expect to weigh in 12 months?

Demographic

30. Age

- a. Below 18
- b. 18 - 25
- c. 26 - 30
- d. 31 - 35
- e. 36 - 45
- f. More than 45

31. Genders

- a. Male
- b. Female

32. Status

- a. Single
- b. Stay together but not married
- c. Married without children
- d. Married with children
- e. Others

33. Household income

- a. Below 15,000
- b. 15,001 – 30,000
- c. 30,001 – 50,000
- d. 50,001 – 80,000
- e. More than 80,000

34. Education

- a. Lower than high school
- b. High school
- c. Vocational Certificate/ High Vocational Certificate
- d. Bachelor's degree
- e. Master's degree
- f. Doctoral degree

35. Who do you live with

- a. Alone
- b. Family
- c. Friends
- d. Others, please specify_____

36. How many people live in your house_____

APPENDIX E
DEMOGRAPHIC

		Count	Column Total N
Age	18-23	3	2.8%
	24-28	25	23.1%
	29-35	37	34.3%
	36-45	29	26.9%
	45-60	14	13.0%
Gender	Male	33	30.6%
	Female	75	69.4%
Status	Single	70	64.8%
	Married without children	7	6.5%
	Married with children	10	9.3%
	Others	21	19.4%
Household income (baht)	Below 15,000	3	2.8%
	15,001 – 30,000	11	10.2%
	30,001 – 50,000	26	24.1%
	50,001 – 80,000	22	20.4%
	More than 80,000	46	42.6%
Highest education	High school	1	.9%
	Bachelor's degree	52	48.1%
	Master's degree	53	49.1%
	Doctoral degree	2	1.9%

APPENDIX F
AWARENESS OF OBESITY PROBLEM

		N	Mean	Std. Deviation
Are you satisfied with your body shape?	30.00+	22	1.91	.868
	25.00 - 29.99	45	2.02	.657
	<= 24.99	41	2.29	.750
	Total	108	2.10	.748
Do you agree with the following statement? (I'm currently facing the overweight problem)	30.00+	22	4.32	1.041
	25.00 - 29.99	45	4.38	.490
	<= 24.99	41	3.95	.835
	Total	108	4.20	.783

APPENDIX G

FOOD CONSUMPTION BEHAVIOR

Appendix G-1: Biggest meal

Pearson Chi-Square Tests

		Q5BMI (Binned)
Which meal is the most food consumed?	Chi-square	4.919
	Df	8
	Sig.	.766

		BMI Group					
		More than 30.00		25.00 - 29.99		23 - 24.99	
		Count	Column Total N %	Count	Column Total N %	Count	Column Total N %
Biggest meal	others	0	0.0%	0	0.0%	1	2.4%
	Breakfast	4	18.2%	9	20.0%	8	19.5%
	Lunch	7	31.8%	13	28.9%	17	41.5%
	Dinner	10	45.5%	21	46.7%	12	29.3%
	Late-night	1	4.5%	2	4.4%	3	7.3%

Appendix G-2: Extra meal

	Count	Percent
Breakfast	84	77.8%
Lunch	103	95.4%
Dinner	101	93.5%
Extra meal (Main meal)	15	13.9%
Extra meal (Snack, Dessert, Fruit, etc.)	61	56.5%
Depends on free time	16	14.8%
Others	3	2.8%

	Count	Column Total N %
I don't eat between meals	13	12.0%
Between Breakfast and Lunch	24	22.2%
Between Lunch and Dinner	76	70.4%
Late night	28	25.9%
Others	4	3.7%

Appendix G-3: Dinner time

	Count	Percent
Before 6:00 pm	18	16.7
After 6:00 pm	90	83.3

Appendix G-4: Dinner time by BMI group

	BMI groups					
	More than 30		25.00 - 29.99		23.00 – 24.99	
	Count	Percent	Count	Percent	Count	Percent
Before 6:00 pm	6	27.3%	6	13.3%	6	14.6%
6:01 – 7:00 pm	3	13.6%	17	37.8%	17	41.5%
7:01 – 8:00 pm	10	45.5%	16	35.6%	9	22.0%
8:01 – 9:00 pm	3	13.6%	5	11.1%	7	17.1%
After 9:00 pm	0	0.0%	0	0.0%	1	2.4%
Do not eat	0	0.0%	1	2.2%	1	2.4%

Pearson Chi-Square Tests

		BMI groups
Q12	Chi-square	10.779
	df	10
	Sig.	.375 ^{a,b}

Appendix G-5: Cross-tabulation on BMI group and Favorite food

	BMI Group
Chi-square	38.092
df	28
Sig.	.097

Appendix G-6: Favorite food

	Count	Percent
Boiled or steamed food	47	43.5%
Deep fried	65	60.2%
Grill	70	64.8%
Stir fried	31	28.7%
Buffet	48	44.4%
Heavily seasoning/rich flavor/Spicy	51	47.2%
Carbohydrate e.g.. Rice, bread	52	48.1%
Soup	27	25.0%
Oily food	11	10.2%
Dessert/Sweet	45	41.7%
Soft drink	27	25.0%
American/Western food e.g. Cheese, pizza	42	38.9%
Meat	62	57.4%
Others	5	4.6%

APPENDIX H
COMPARE ATTITUDE TO LOSE WEIGHT MEAN DIFFERENT
BETWEEN GENDER

		Sum of Squares	Df	Mean Square	F	Sig.
It's hard to lose weight	Between Groups	17.943	1	17.943	13.825	0.00
	Within Groups	137.576	106	1.298		
	Total	155.519	107			
Losing weight is not top priority in my life	Between Groups	4.991	1	4.991	3.029	0.08
	Within Groups	174.667	106	1.648		
	Total	179.657	107			
I think my weight is higher than average but it's not that much that I need to lose my weight yet	Between Groups	9.637	1	9.637	6.456	0.01
	Within Groups	158.242	106	1.493		
	Total	167.880	107			
It's not hard to lose weight but I'm just lazy	Between Groups	.081	1	.081	.056	0.81
	Within Groups	151.799	106	1.432		
	Total	151.880	107			
Losing weight is hard for a lazy person like me	Between Groups	11.132	1	11.132	7.331	0.01
	Within Groups	160.970	106	1.519		
	Total	172.102	107			

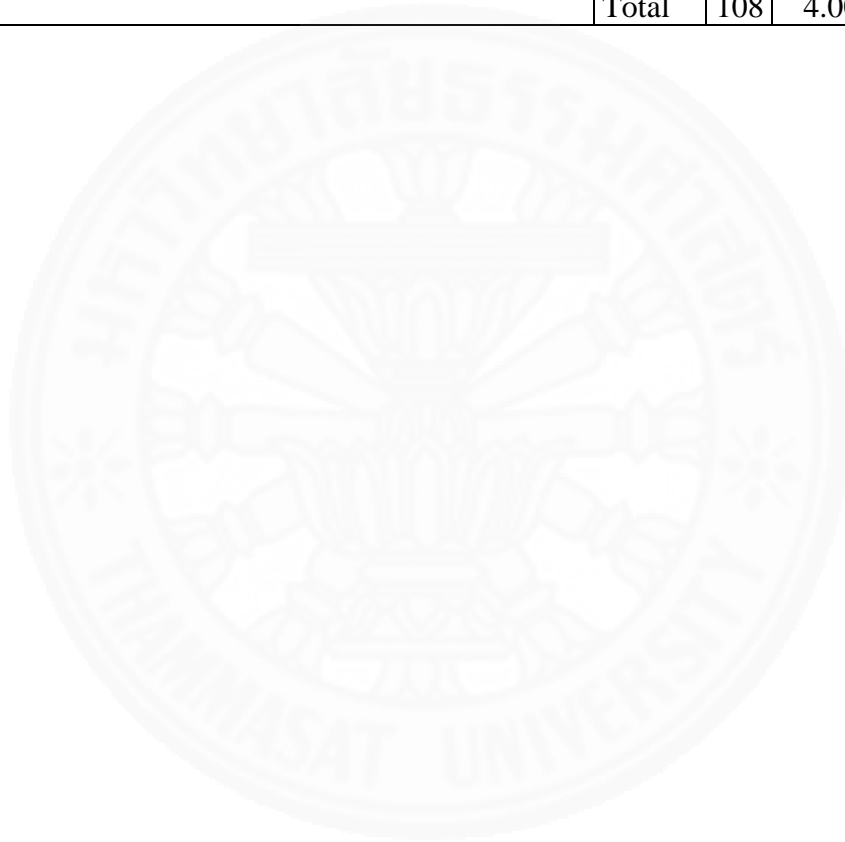
		Sum of Squares	Df	Mean Square	F	Sig.
I have no motivation to lose weight	Between Groups	13.364	1	13.364	8.158	0.01
	Within Groups	173.636	106	1.638		
	Total	187.000	107			
I think I will have a better health if I lose my weight	Between Groups	.298	1	.298	.733	0.39
	Within Groups	42.999	106	.406		
	Total	43.296	107			
Losing weight is not necessary for me	Between Groups	1.585	1	1.585	1.328	0.25
	Within Groups	126.516	106	1.194		
	Total	128.102	107			
The process of weight loss is boring	Between Groups	2.528	1	2.528	1.385	0.24
	Within Groups	193.435	106	1.825		
	Total	195.963	107			
I think overweight problem is from the genetic	Between Groups	29.688	1	29.688	22.282	0.00
	Within Groups	141.229	106	1.332		
	Total	170.917	107			
To be on the process of weight loss, it blocks me from activity with friends and family such as have dinner	Between Groups	11.960	1	11.960	7.065	0.01
	Within Groups	179.447	106	1.693		
	Total	191.407	107			

		Sum of Squares	Df	Mean Square	F	Sig.
I don't feel confident if I'm not losing my weight	Between Groups	2.716	1	2.716	1.850	0.18
	Within Groups	155.581	106	1.468		
	Total	158.296	107			
I know the right way to lose weight	Between Groups	.095	1	.095	.088	0.77
	Within Groups	114.007	106	1.076		
	Total	114.102	107			
I think all reason that block me from losing weight is just an excuse	Between Groups	.698	1	.698	.811	0.37
	Within Groups	91.302	106	.861		
	Total	92.000	107			

APPENDIX I
DESCRIPTIVE ANALYSIS BETWEEN GENDER AND
ATTITUDE TO LOSE WEIGHT

		N	Mean	Std. Deviation
It's hard to lose weight	Male	33	3.18	1.380
	Female	75	4.07	1.018
	Total	108	3.80	1.206
Losing weight is not top priority in my life	Male	33	3.00	1.414
	Female	75	2.53	1.223
	Total	108	2.68	1.296
I think my weight is higher than average but it's not that much that I need to lose my weight yet	Male	33	2.85	1.417
	Female	75	2.20	1.127
	Total	108	2.40	1.253
It's not hard to lose weight but I'm just lazy	Male	33	3.94	1.171
	Female	75	3.88	1.208
	Total	108	3.90	1.191
Losing weight is hard for a lazy person like me	Male	33	3.30	1.403
	Female	75	4.00	1.151
	Total	108	3.79	1.268
I have no motivation to lose weight	Male	33	2.64	1.410
	Female	75	3.40	1.219
	Total	108	3.17	1.322
I think I will have a better health if I lose my weight	Male	33	4.61	.899
	Female	75	4.72	.481
	Total	108	4.69	.636
Losing weight is not necessary for me	Male	33	1.97	1.380
	Female	75	1.71	.941
	Total	108	1.79	1.094
The process of weight loss is boring	Male	33	2.79	1.516
	Female	75	3.12	1.273
	Total	108	3.02	1.353
I think overweight problem is from the genetic	Male	33	1.52	.972
	Female	75	2.65	1.225
	Total	108	2.31	1.264
To be on the process of weight loss, it blocks me from activity with friends and family such as have dinner	Male	33	2.42	1.437
	Female	75	3.15	1.238
	Total	108	2.93	1.337

		N	Mean	Std.
I don't feel confident if I'm not losing my weight	Male	33	3.58	1.347
	Female	75	3.92	1.148
	Total	108	3.81	1.216
I know the right way to lose weight	Male	33	3.76	1.251
	Female	75	3.69	.930
	Total	108	3.71	1.033
I think all reason that block me from losing weight is just an excuse	Male	33	4.12	.893
	Female	75	3.95	.943
	Total	108	4.00	.927



APPENDIX J
CROSS TABULATION BETWEEN SUCCESS RATE AND
BARRIER

	Success rate									
	Always succeed		Often succeed		Rarely succeed		Never succeed		Never try to lose weight	
	Count	%	Count	%	Count	%	Count	%	Count	%
Craving for food while on the process of weight loss	3	37.5%	2	7.4%	14	32.6%	5	23.8%	0	0.0%
Procrastination	2	25.0%	12	44.4%	30	69.8%	14	66.7%	6	66.7%
No time/Don't have enough time	4	50.0%	10	37.0%	9	20.9%	6	28.6%	3	33.3%
Tired from work or study	5	62.5%	11	40.7%	13	30.2%	4	19.0%	2	22.2%
Traffic/Travel from place to place eat up the time for exercise	1	12.5%	2	7.4%	3	7.0%	1	4.8%	0	0.0%
Friends and family like to invite for lunch or dinner	2	25.0%	5	18.5%	6	14.0%	2	9.5%	1	11.1%
Exercise makes me too exhausted and don't have enough energy to do other things	0	0.0%	0	0.0%	5	11.6%	2	9.5%	1	11.1%
I don't know where to start	0	0.0%	1	3.7%	0	0.0%	2	9.5%	1	11.1%

I cannot keep doing it consistency	2	25.0%	13	48.1%	19	44.2%	8	38.1%	2	22.2%
No proper/suitable place for me to exercise	2	25.0%	4	14.8%	4	9.3%	0	0.0%	2	22.2%
Diet/Healthy food is not delicious	0	0.0%	1	3.7%	2	4.7%	0	0.0%	3	33.3%
It's hard to find/buy diet/healthy food	0	0.0%	1	3.7%	0	0.0%	1	4.8%	0	0.0%
Price of diet/healthy food is expensive	0	0.0%	1	3.7%	2	4.7%	1	4.8%	1	11.1%
The result slowly shown up	1	12.5%	11	40.7%	16	37.2%	14	66.7%	2	22.2%

Pearson Chi-Square Tests

		Success rate
Barrier	Chi-square	81.588
	df	56
	Sig.	.014 ^{*,b,c}

APPENDIX K
MEANS DIFFERENCE BETWEEN GENDER TOWARDS
REASON NOT TO START TO LOSE WEIGHT

		Sum of Squares	df	Mean Square	F	Sig.
...because I'm not really focused to do it	Between Groups	.851	1	.851	.727	.396
	Within Groups	124.065	106	1.170		
	Total	124.917	107			
...because I'm lazy	Between Groups	2.121	1	2.121	2.057	.154
	Within Groups	109.314	106	1.031		
	Total	111.435	107			
...because I'm tired from work or study	Between Groups	2.104	1	2.104	1.560	.214
	Within Groups	142.970	106	1.349		
	Total	145.074	107			
...because I think if I'm doing an exercise, then, it will be too exhausted	Between Groups	.438	1	.438	.259	.612
	Within Groups	179.229	106	1.691		
	Total	179.667	107			
...because I don't have time	Between Groups	1.401	1	1.401	.877	.351
	Within Groups	169.265	106	1.597		
	Total	170.667	107			
...because of procrastination	Between Groups	8.451	1	8.451	6.116	.015
	Within Groups	146.465	106	1.382		
	Total	154.917	107			
...because it's not my priority	Between Groups	1.241	1	1.241	.858	.357
	Within Groups	153.425	106	1.447		
	Total	154.667	107			
...because I think it's hard to do	Between Groups	12.406	1	12.406	7.979	.006

		Sum of Squares	df	Mean Square	F	Sig.
	Within Groups	164.807	106	1.555		
	Total	177.213	107			
...because I don't think my weight is over standard that much	Between Groups	6.053	1	6.053	3.266	.074
	Within Groups	196.465	106	1.853		
	Total	202.519	107			
...because I feel stress and feel tolerance when I'm on process of weight loss	Between Groups	7.597	1	7.597	4.375	.039
	Within Groups	184.061	106	1.736		
	Total	191.657	107			
...because I cannot eat the food that I like	Between Groups	7.218	1	7.218	4.448	.037
	Within Groups	171.995	106	1.623		
	Total	179.213	107			
...because I don't where to start	Between Groups	1.008	1	1.008	.703	.404
	Within Groups	151.983	106	1.434		
	Total	152.991	107			
...because healthy/diet food is less appetite	Between Groups	17.069	1	17.069	10.352	.002
	Within Groups	174.783	106	1.649		
	Total	191.852	107			
...because I don't think I can do it	Between Groups	10.185	1	10.185	6.720	.011
	Within Groups	160.667	106	1.516		
	Total	170.852	107			

		N	Mean	SD.	Std. Error	Min	Max
...because I'm not really focused to do it	Male	33	3.73	1.329	.231	1	5
	Female	75	3.92	.955	.110	1	5
	Total	108	3.86	1.080	.104	1	5
...because I'm lazy	Male	33	3.91	1.156	.201	1	5
	Female	75	4.21	.949	.110	1	5
	Total	108	4.12	1.021	.098	1	5
...because I'm tired from work or study	Male	33	3.70	1.287	.224	1	5
	Female	75	4.00	1.103	.127	1	5
	Total	108	3.91	1.164	.112	1	5
...because I think if I'm doing an exercise, then, it will be too exhausted	Male	33	3.18	1.424	.248	1	5
	Female	75	3.32	1.243	.144	1	5
	Total	108	3.28	1.296	.125	1	5
...because I don't have time	Male	33	3.27	1.398	.243	1	5
	Female	75	3.52	1.201	.139	1	5
	Total	108	3.44	1.263	.122	1	5
...because of procrastination	Male	33	3.61	1.519	.265	1	5
	Female	75	4.21	.990	.114	1	5
	Total	108	4.03	1.203	.116	1	5
...because it's not my priority	Male	33	3.94	1.223	.213	1	5
	Female	75	3.71	1.194	.138	1	5
	Total	108	3.78	1.202	.116	1	5
...because I think it's hard to do	Male	33	2.76	1.347	.234	1	5
	Female	75	3.49	1.201	.139	1	5
	Total	108	3.27	1.287	.124	1	5
...because I don't think my weight is over standard that much	Male	33	3.06	1.435	.250	1	5
	Female	75	2.55	1.328	.153	1	5
	Total	108	2.70	1.376	.132	1	5

		N	Mean	SD.	Std. Error	Min	Max
...because I feel stress and feel tolerance when I'm on process of weight loss	Male	33	2.42	1.324	.230	1	5
	Female	75	3.00	1.315	.152	1	5
	Total	108	2.82	1.338	.129	1	5
...because I cannot eat the food that I like	Male	33	2.88	1.409	.245	1	5
	Female	75	3.44	1.211	.140	1	5
	Total	108	3.27	1.294	.125	1	5
...because I don't where to start	Male	33	2.36	1.055	.184	1	4
	Female	75	2.57	1.254	.145	1	5
	Total	108	2.51	1.196	.115	1	5
...because healthy/diet food is less appetite	Male	33	2.36	1.084	.189	1	5
	Female	75	3.23	1.361	.157	1	5
	Total	108	2.96	1.339	.129	1	5
...because I don't think I can do it	Male	33	2.00	1.146	.199	1	5
	Female	75	2.67	1.266	.146	1	5
	Total	108	2.46	1.264	.122	1	5

APPENDIX L

CROSS TABULATION BETWEEN BARRIER TO LOSE WEIGHT AND STAGE TO WEIGHT LOST

	Other		Kick-off stage		Early stage		For a while stage		Result maintaining stage	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
tired from work or study	2	66.7%	27	71.1%	19	57.6%	6	66.7%	16	64.0%
Procrastinate	0	0.0%	30	78.9%	26	78.8%	5	55.6%	15	60.0%
Friends and family like to invite for lunch or dinner	1	33.3%	21	55.3%	20	60.6%	3	33.3%	15	60.0%
Craving for food while on the process of weight loss	2	66.7%	27	71.1%	21	63.6%	5	55.6%	14	56.0%
I cannot keep doing it consistency	0	0.0%	29	76.3%	26	78.8%	4	44.4%	14	56.0%
It's hard to find/buy diet/healthy food	0	0.0%	13	34.2%	13	39.4%	2	22.2%	13	52.0%
The result slowly shown up	0	0.0%	17	44.7%	18	54.5%	7	77.8%	12	48.0%
No time/Don't have enough time	2	66.7%	23	60.5%	19	57.6%	6	66.7%	12	48.0%

	Other		Kick-off stage		Early stage		For a while stage		Result maintaining stage	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Traffic/Travel from place to place eat up the time for exercise	0	0.0%	13	34.2%	19	57.6%	4	44.4%	12	48.0%
Price of diet/healthy food is expensive	0	0.0%	14	36.8%	20	60.6%	1	11.1%	12	48.0%
Diet/Healthy food is not delicious	0	0.0%	13	34.2%	11	33.3%	2	22.2%	10	40.0%
No proper/suitable place for me to exercise	0	0.0%	13	34.2%	14	42.4%	4	44.4%	9	36.0%
Exercise makes me too exhausted and don't have enough energy to do other things	0	0.0%	12	31.6%	12	36.4%	0	0.0%	8	32.0%
I don't know where to start	0	0.0%	6	15.8%	11	33.3%	2	22.2%	5	20.0%

BIOGRAPHY

Name	Miss Napharat Tangkittithaworn
Date of Birth	September 04, 1987
Educational Attainment	2016: Master of Science Program in Marketing (International Program), Thammasat University 2010: Bachelor of Business Administration, Major in Marketing
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