EATING BEHAVIOR, BODY IMAGE, AND SELF-ESTEEM AMONG
STUDENTS AT ASSUMPTION UNIVERSITY

RUEDEE PHOLTHAWEECHAI

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

MASTER OF SCIENCE IN COUNSELING PSYCHOLOGY

Graduate School of Psychology
Assumption University
Thailand

2006

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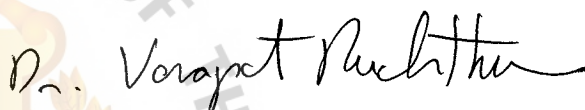## RUEDEE PHOLTHAWEECHAI

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The purpose of this study was to find out the relationship among eating behavior, body image, and self-esteem in male and female university students at Assumption University.

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EATING BEHAVIOR, BODY IMAGE, AND SELF-ESTEEM AMONG STUDENTS AT ASSUMPTION UNIVERSITY

RUEDEE PHOLTHAWEECHAI

ABSTRACT

The purpose of this study was to find out the relationship among eating behavior, body image, and self-esteem in male and female university st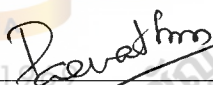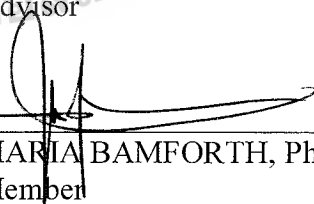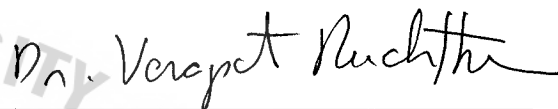udents at Assumption University. The respondents consisted of 35 males and 65 females, mostly Thai-Thai and Thai-Chinese. The main variables were examined in relation to gender, age, and body type. Results indicated that female students, especially those who were underweight and of normal weight, expected their body type to be underweight.

The research instrument consisted of three kinds of instruments, namely:
1. Demographic questionnaire which gathered background information about the participants such as gender, age, ethnicity, and body type.
2. Eating Behaviors and Body Image Test (EBBIT). The test is a 42-item self-report questionnaire.
3. Self-Esteem Rating Scales (SERS). The SERS is a 40-item instrument that was developed to provide a measure of self-esteem.

The results confirmed that there is no difference in eating behavior between the levels of age. The older the participants, the more self-esteem they have. From 100 respondents, there were only male students wanted to be overweighed while the majority of the female students preferred to be underweighted. Moderate positive relationship was found between eating behavior and body image whereas weak negative relationship exists between body image and self-esteem. However, with regard to self-esteem between male and female students, no significant difference was found.

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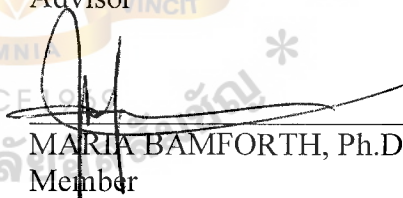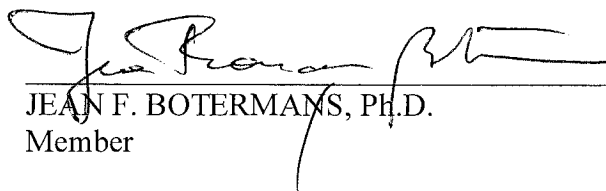VORAPOT RUCKTHUM, Ph.D.
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CHAPTER I

Background of the Study

Introduction

The topic of eating disorders become increasingly important to counseling psychologists as it has been recognized that the widespread anxiety some women and men feel about the size and weight of their bodies has serious psychological and physical health consequences. For most people, eating is a natural behavior, essential as well as an enjoyable activity. But for others, particularly adolescents, they go to extremes by eating less and somehow tend to harm themselves and their bodies.

In today's society, many adolescents, especially girls, are on diet and believe that they are fat even though their weight to height ratio is normal. The feeling of being thin and not fat is very important to most teenagers and they feel the pressure to diet and to maintain or achieve the ideal figure. Adolescents face stress in relation to normal growing up to cultural pressures in looking slim and having a body image that mirrors peers' norms and values. Many adolescents make it through their youth without showing significant behavior difficulties. Others, however, negotiate these pressures through bad eating behaviors (Guernina, 1998).

Dworkin and Kerr (1987) discussed problems associated with a negative body image among women and compared several counseling interventions designed to improve body image. Dworkin and Kerr's work provided an excellent foundation, but much remains to be learned about the prevalence and correlates of eating disorders among otherwise normally functioning individuals.

Researches have found that adolescent girls are more likely less satisfied with their weight than are adolescent boys (Fallon & Rozin, 1985; Tiggermann, 1992). Most girls

will be satisfied if they were underweight. So concern with thinness and dieting has been linked to increasing prevalence of weight control and bad eating behaviors among students. In today's society, everybody can see that there are a lot of clinics that advertise for weight loss. Most of the customers are students, and most of them are not fat but are just not satisfied with their body image. Concern for weight, dieting, and body image is associated with bad eating behavior like self-induced vomiting and with the use of diet pills. Furthermore, a strong desire for thinness has been associated with problem eating behaviors. And that is another way to say that they are hurting themselves.

Many students are pressured to conform to culturally defined standards of beauty by falling into the slender trap. Ross and Gilbert (1985) explained that adolescents have become unfit as result of watching television. Dieting appears to be the conforming norm with the admired slender body and size. The intention to lose weight becomes an obsession, as the adolescent does not know when to stop. Garner and Garfinkel (1985) stressed that withdrawal from dieting can produce intolerable symptoms such as rapid weight gain, physical mental pain, and deep distress in combination with low self-esteem (as cited in Guernina, 1998).

As a future practitioner of counseling psychology, the researcher is interested in the actual interplay between eating behavior and body image as well as between body image and self-esteem. Based on a review of literature and on her objective observations, this researcher identified adolescents, particularly undergraduate students, as the objective of this study.

Objectives of the Study

The objectives of this study consists of the following:

1. To examine the relationship of the eating behavior of adolescent students at Assumption University in relation to the demographic variables gender, age and body type.

2. To study the relationship between eating behavior and body image of these students.

3. To study the relationship between the body image and self-esteem of these students.

4. To examine the students' self-esteem based on their demographic variables gender, age, and body type.

Statement of the Problem

As suggested by the research objectives, the general purpose of this study is to find out the correlation among eating behavior, body image, and self-esteem of adolescent students at Assumption University. The underlying assumption of the researcher is that Thai teenagers nowadays, especially females, are concerned with their body size, and that many of them are on diet believing they are fat, when actually they are not.

This leads to the formulation of the following questions: (a) Are there differences in the eating behavior of university students as a function of gender, age, and body type? (b) Is there a relationship between eating behavior and body image? and (c) Is there a relationship between body image and self-esteem?

Research Hypotheses

Based on the research objectives and problems of the study, the following hypotheses were generated:

H1   There are significant differences in the eating behavior of Assumption University students based on gender, age, and body type.

H2   There are significant differences in the self-esteem of Assumption University students based on gender, age, and body type.

H3   There is a significant relationship between eating behavior and body image.

H4   There is a significant relationship between body image and self-esteem.

Significance of the Study

This study will contribute to a better understanding of the relationship among eating behavior, body image, and self-esteem of the students in a selected university in Bangkok. The findings will also be able to generate results of the comparison between gender, age, and body type of the students.

The findings of this study will be useful for other researchers who are interested in further exploring gender differences and body image and eating behavior patterns of these young people. The study can also help the respondents to realize how certain perceptions have influenced their choices, such as dieting behavior to lose weight which may affect their self-esteem. In addition, the information obtained on eating behavior and body image in this study will be useful for the counselors dealing with students who have problems with eating behavior and unhealthy body image which may affect their self-esteem.

Finally, this study may contribute to people's understanding that healthy eating behavior together with good self-concept, in relation to body image among adolescents, may significantly increase their self-esteem.

Scope and Limitations of the Study

The study focused on the eating behavior, body image, and self-esteem among undergraduate students of Assumption University in Bangkok. The researcher identified three demographic characteristic of these students, namely: gender, age, and body type.

There are some foreseen limitations relevant to this research, as follows:

1. The respondents are drawn from Assumption University students only. Therefore, the research results cannot be generalized.

2. The selected age range of respondents is between 15-26 years only; students that do not fit this age range were automatically disqualified from the research.

3. Some other demographic variables such as parents' income, family background, etc. were not be factored into the demographic profile of the respondents.

Definition of Terms

Binge Eating Disorder (BED) - is a provisional eating disorder included in the Diagnostic Statistical Manual of Mental Disorders (DSM-IV). Like individuals with bulimia nervosa, individuals with BED engage in recurrent binge eating. The definition of a binge episode in DSM-IV includes two components: (a) eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat in as similar period of time, under similar circumstances, and (b) a sense of lack of control over eating during the episode (Guss, Kissileff, & Devlin, 2002).

Body Image - refers to how people think, feel, and behave with regard to their own physical attributes. Body image may be construed as a multidimensional self-attitude toward one's body, particularly its appearance (Cash & Pruzinsky, 1990). Based on the instrument (EBBIT) manual, body image can be assessed through the subscales: body image dissatisfaction, restrictive eating factor, perceived body size, and desired body size.

Self-Esteem - expresses an attitude of approval or disapproval and indicates the extent to which a person believes him/herself capable, significant, successful, and worthy (Coopersmith, 1984). As used in this study, self-esteem refers to a range of areas of self-evaluation including overall self-worth, social competence, problem solving ability, intellectual ability, self-competence, and worth relative to other people.

Conceptual Framework
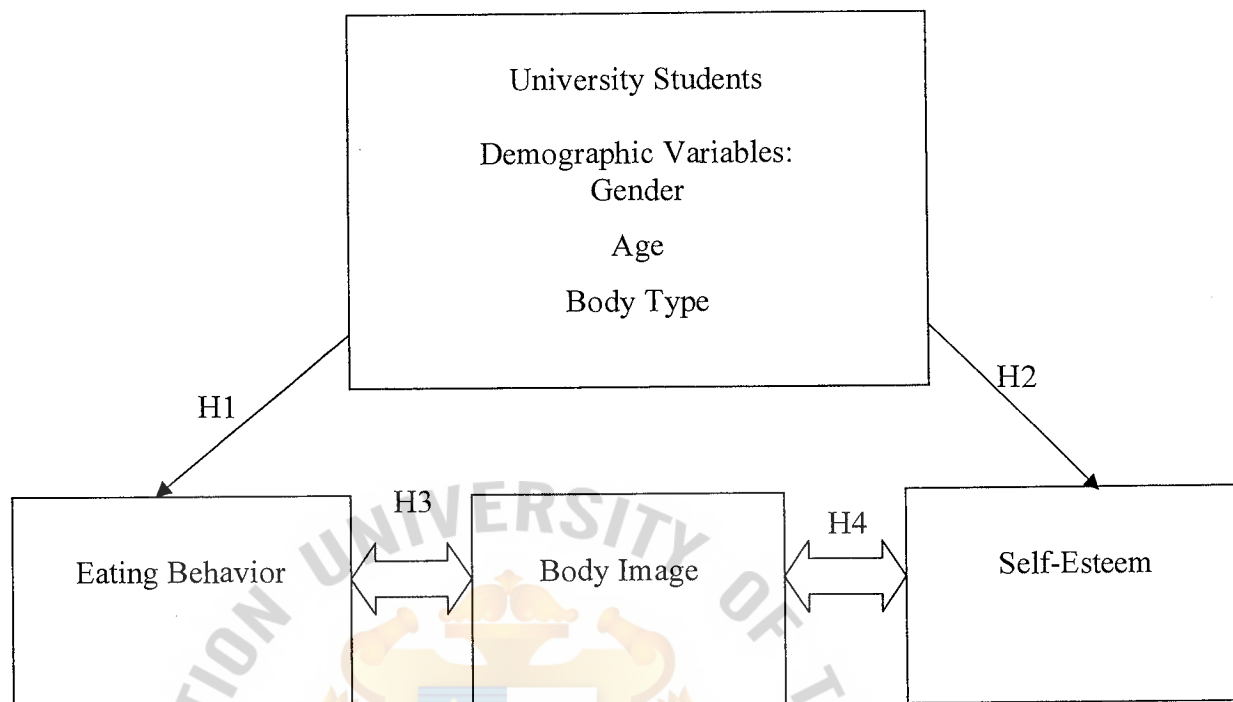
The conceptual framework is based on the research hypotheses, namely: (a) There are significant differences in the eating behavior of Assumption University students based on gender, age, and body type, (b) There are significant differences in the self-esteem of Assumption University students based on gender, age, and body type, (c) There is a significant relationship between eating behavior and body image, and (d) There is a significant relationship between body image and self-esteem.

CHAPTER II

Review of Related Literature

The chapter presents a review of literature that is related to the nature and scope of the study. Review of related literature is presented in the following order: (a) Eating Behavior, (b) Body Image, and (c) Self-Esteem.

Eating Behavior

Restraint and Binge Eating Disorder

Binge eating disorder (BED) is a provisional eating disorder included in the Diagnostic Statistical Manual of Mental Disorders (DSM-IV). Like individuals with bulimia nervosa, individuals with BED engage in recurrent binge eating. The definition of a binge episode in DSM-IV includes two components: (a) eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat in a similar period of time, under similar circumstances, and (b) a sense of lack of control over eating during the episode (Guss, Kissileff, & Devlin, 2002). The diagnosis of BED requires recurrent episodes of binge eating in the absence of appropriate compensatory behaviors to avoid weight gain. Many questions remain regarding the development and maintenance of this category of eating disorder. Dietary restraint and cognitive restraint were significantly correlated. BMI was negatively correlated with cognitive restraint. Weight and shape concern were both significantly correlated with both restraint measures; body dissatisfaction was significantly correlated only with dietary restraint (Masheb & Crilo, 2000).

The construct of dietary restraint was originally defined as a cognitive tendency to restrict intake as a means of maintaining or losing body weight and tends to be highly

related to dieting behavior, body dissatisfaction, and weight concerns. Initially, dietary restraint was believed to emerge during adolescence as a consequence of the normative weight gain associated with puberty. This weight gain was hypothesized to promote body dissatisfaction and more frequent and extreme weight control measures. Positive alternatives to attempts at dietary restriction are essential to promoting healthful weight status among children, and should include encouraging physical activity, promoting children's acceptance of a variety of low-energy-density foods, and providing guides to appropriate portion sizes (Shunk & Birch, 2004).

Body Mass Index (BMI)

Body Mass Index (BMI) was the name given by Keyes, Fidanza, Karvonen, Kimura, and Taylor (1972) to the ratio of the weight to height. BMI provides a reliable indicator of body fatness for most people and is used to screen for weight categories that may lead to health problems. BMI can be considered an alternative for direct measures of body fat. Additionally, BMI is an inexpensive and easy-to-perform method of screening for weight categories that may lead to health problems. BMI is used as a screening tool to identify possible weight problems for adults. However, BMI is not a diagnostic tool. For example, a person may have a high BMI. However, to determine if excess weight is a health risk, a healthcare provider would need to perform further assessments. These assessments might include skinfold thickness measurements, evaluations of diet, physical activity, family history, and other appropriate health screenings (Mei, et al., 2002; Garrow & Webster, 1985; Prentice & Jebb, 2001).

The adolescents' own positive attitude to slimness, negative mood (girls), and anxiety symptoms that reflect social fears (boys) and physical aspects of anxiety (girls and boys) were important correlates of lower BMI than ideal. Adolescent cultural norms need

to be addressed in preventive work. However, in girls, separation anxiety might be a protective factor against underweight. In girls, overweight seems to be associated with negative self-esteem (Ivarsson, Svalander, Litlere, & Nevonen, 2006).

BMI is calculated the same way for both adults and children. The calculation is based on the following formulas:

Measurement units	Formula and calculation
Kilograms and meters (or centimeters)	Formula: weight (kg) / [height (m)]2 Calculation: [weight (kg) / height (m) / height (m)] With the metric system, the formula for BMI is weight in kilograms divided by height in meters squared. Since height is commonly measured in centimeters, divide height in centimeters by 100 to obtain height in meters. Example: Height = 165 cm (1.65 m), Weight = 68 kg Calculation: 68 ÷ (1.65)2 = 24.98

The standard weight status categories associated with BMI ranges for adults are shown in the following table.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

Anorexia Nervosa (AN)   44535 *e* -1

According to www.anorexiainfo.net, www.familydoc.org, www.anad.org, and American Physician Journal (April 1, 2004), Anorexia is the shortened name of the eating disorder 'anorexia nervosa.' It is an illness that usually affects teenage girls. Teenage boys, grown-up women, and men also can get it. People with anorexia think about being thin a lot of the time. They try to lose a lot of weight, and they are very worried about gaining weight. They think they are fat even though they are very thin. Anorexia is more than just a problem with food and weight. It is a way of using food and weight to deal with emotional problems.

People with anorexia keep themselves underweight. They starve themselves by not eating enough food; they don't eat high-calorie foods, and they may exercise too much. People with bulimia often eat huge amounts of food at one time and then make themselves throw up soon after eating. They also might take laxatives or water pills to keep from gaining weight. People with bulimia usually do not lose as much weight as people with anorexia (Sysko, Walsh, Schebendach, & Wilson, 2005).

Identifying anorexia nervosa.

The eating disorder anorexia nervosa can be identified in the following ways:

1. Weight is 15 % below ideal body weight, Refusal to maintain a normal weight or above normal weight for height and age. Not everyone who is of a low weight is anorexic; it is important to recognize that it is the *refusal* to maintain a normal weight that is the key factor. It is sometimes difficult to identify anorexia in children because for their height they may be of a normal weight. A possible complication of an eating disorder is stunted growth in children. A pediatrician will need to carefully monitor him/her with a growth

chart. Also, young children may not talk about weight but rather may describe physical complaints such as nausea or feeling full.

2. Intense fear of gaining weight or becoming fat, even if underweight. This intense fear is powerful enough to cause individuals to diet to the point of starvation. While the term anorexia means loss of appetite, this is not true of anorexia nervosa. A person with anorexia is hungry but he or she is afraid to eat because of the fear. Often specific foods are avoided especially those that are high in fat and calories. Often individuals will become vegetarians and want to eat healthily when indeed the issue is the fear of gaining weight.

3. Body image problems. When a person with anorexia looks into a mirror, he/she does not often see an accurate reflection. A person with anorexia sees him/herself as fat, even if he/she is dangerously thin. This is a very frightening experience and feels very real, driving the person to diet.

4. Ammenorrhea or absence of menstruation. Missing three periods is usually the criteria for this definition. This criteria cannot apply to situations where the person is a male, a young female who has not started her periods, or a female who is on birth control pills.

Types of anorexia.

Many individuals with anorexia will severely restrict their calories, sometimes taking in only a few hundred calories a day or just water. This is called the *restricting type.* Our bodies do not like to starve. Remember, the individual with anorexia has an appetite; they just try to control it. It is very difficult when you are starving not to want to eat. What happens to many as a result is that they lose control when they eat, or eat something they feel they should not have eaten. For these individuals, this might mean something as simple as a cookie, a normal meal, or even a binge. With the fear of gaining weight, they

may vomit or exercise. This type of anorexia is called the *binge-eating/purging type* one of the most dangerous forms of an eating disorder.

Bulimia Nervosa

Binge eating.

All of us will overeat now and then; this is normal behavior. Binge eating in bulimia has certain characteristics that make it much different.

A binge is characterized by: (a) a larger amount of food than most people would eat during the same time period (may consist of thousands of calories), (b) consumed within a short period of time (typically 2 hours or less), (c) a feeling that one cannot stop or control one's eating, and (d) accompanied by physical or emotional distress.

Purging.

Following a binge, an individual may feel consumed with fear, guilt, shame, or the need to try to undo his/her behavior. Purging is a way to compensate for binging. Purge behaviors come in many forms: vomiting, taking laxatives, water pills, starving, or excessive exercise.

It is important to recognize that purging rarely works well for weight loss. Laxatives and diuretics make you lose water not weight. Even vomiting seems to be ineffective, it has been reported that 50-75% of the calories have already been absorbed.

Weight in bulimia nervosa.

Weight can be normal, underweight, or overweight. Unlike anorexics who can be often identified by their low weight, it is more difficult to identify bulimics. Weight can

also dramatically shift and large swings might be an indicator that someone is developing

an eating disorder (Sysko, Walsh, Schebendach, & Wilson, 2005).

Body Image

Adolescents and Body Image

Most of the research concerning dieting behavior and body image have examined

these concerns within an adolescent population. Some of the research had been done to

extend these issues to a younger population, although there was some evidence indicating

that weight concerns begin before adolescence. Lawrence and Thelen (1995) found that

half of the sample of adolescent girls had dieted from the pre-adolescent age. And many of

the adolescents are on diet and believe that they were fat. Research had found that even

young children were engaging in dieting behavior. Girls, significantly more than boys,

engaged in dieting behavior and were more concerned about their body image. Most

adolescent girls were disturbed about being overweight while some of adolescent boys

were worried about their weight and their bodies. Body image is commonly defined as a

mental construct, embedded in a bigger mental construct that can "deviate substantially

from a person's objective physical characteristics" (Myers & Biocca, 1992). For many,

dieting has become the normal eating pattern (Herman, Polivy, & Silver,1979). As many

as 65% of adolescents girls and 50% of adolescent boys have indicated that they have tried

to do something about their weight. There is also evidence that dieting behavior is not

uncommon in pre-adolescents (Lawrence & Thelen, 1995).

Social Influence and Body Image

The body image also has socialized and cultural components. The concept of the

socialized body also means that a complex cultural idea of the body image underlies

consumers' satisfaction with their appearance, their sense of an ideal or more desirable body, and the consumption that these self-perceptions motivate. Body image concerns and other motivations for avoiding obesity or controling weight within given limits also vary with ethnic background, age, socioeconomic status, and gender. This cultural ideology is concretely shown through mass media, advertising, everyday beliefs, interpersonal relationships, and the course of social encounters. "These social influences all exert a shaping influence on the way individuals interpret the symbolic meanings of the body and the multitude of attributions about self and others that follow from these interpretations" (Thomson & Hirschman, 1995). However, body image evaluation refers to how much people are satisfied or dissatisfied with how they look, and it may be defined as a multidimensional self-attitude toward one's body (Moth & Cash, 1997). From the research, women were mostly only concerned about being too fat or overweight, but men were more concerned if they are too skinny as well as if they are too fat.

In one study, researchers stated that pre-adolescents' perceptions of healthy and attractive female body sizes and shapes are influenced by the parents' preferences or their ethnic group membership (Markey, Tinsley, Ericksen, Ozer, & Markey, 2002). The results of this research revealed a similarity in the preferences of the adolescents and their parents' preferences about body image and shape. Both Euro-American and Mexican-American participants reported similar preferences for females' body size and shape.

According to Hayslip, Cooper, Dougherty, and Cook (1997), socio-cultural factors also have an influence on body image. The individual's concept of the body image is therefore derived from others' reactions and the person's own values and emotional development involving the body. These influence the interdependent relation between self-perceptions and social relations. The research also reported that persons who were

committed in the relationship may be less motivated to commit to the time and energy to change their physical appearance.

Other Factors Related to Body Image Dissatisfaction

Researchers have found strong correlations between body image disturbance and lowered self-esteem, increased anxiety, elevated depression, general psychological distress, and disturbed eating behaviors (Abrams et al., 1993; Denniston, Roth and Gilroy, 1992; Kostanski & Gullone, 1998; for a review, see Thompson, 1990). Noles, Cash, and Winstead (1985) assessed levels of depression, body image dissatisfaction, and physical attractiveness based on ratings from objective raters in 224 college men and women. They found higher body image dissatisfaction for depressed individuals as compared to non-depressed individuals, regardless of observer-rated attractiveness. Negative body image has also been shown to be predictive of eating disorders (Wiederman & Hurst, 1997) and has been shown to be the best or only predictor of later eating problems in several longitudinal studies assessing adolescent or college females (Attie & Brooks-Gunn, 1989).

Self-Esteem

Self-esteem is a theoretical construct of personality and has been defined as liking and respecting oneself. Self-esteem has also been defined as how much a person likes or values oneself in addition to how much he or she feels competent in dealing with the world he or she perceives (Crandall, 1973).

There is evidence from studies in many countries that self-esteem is higher for girls than for boys under 13 years (Pallas, Entwhistle, Alexander, & Weinstein, 1990; Watkins et al., 1997), but is higher for boys than for girls during adolescence (Bolognini, Plancherel, Bettwshart, & Halfon, 1996; Chubb, Fertman, & Ross, 1997), and higher for

men than for women (Hayes, Crocker, & Kowaslski, 1999; Hong et al., 1993; O'Brien, 1991). Sahlstein and Allen (2002) found that as age increased, the gender difference in favor of boys increased. This implies that between childhood and adolescence there might be a decrease in girl's self-esteem and or an increase in boy's self-esteem.

Given that women are biologically predisposed to have a higher percentage of body fat and that the standard of thinness is more extreme for women than for men (Rodin, Silberstein, & Strcigel-Moore, 1984), it is reasonable to expect a stronger relationship between body image dissatisfaction and self-esteem for women. In fact, Kostanski and Gullone (1998) found that being female and having low self-esteem was not predictive of body image dissatisfaction for participants with healthy body weight. For college women, the pressure to achieve high standards of thinness and attractiveness in a competitive college environment is related to lower self-esteem (Harris, 1995; Mintz & Betz, 1988).

A person's self-concept is theorized to consist of cognitive, behavior, and evaluative components. Self-esteem refers to the third of these, and it is defined as the 'level of global regard one has for the self' (Harter, 1993). Several researchers began to emphasize the importance of a multidimensional concept of self-esteem. It is suggested that global self-esteem explains psychological well being while specific self-esteem explains behavior (Harter, 1985; Marsh, 1986; Rosenberg, Schooler, Schoenberg, and Rosenberg,1995). Self-esteem may be separated into various elements that are related to specific perceptions. Franzoi and Shields (1984) suggested that physical self-worth (i.e., body-esteem) is one component of self-esteem that measures constructs such as perceived sport competence, physical condition, attractiveness, and weight concern. As a subcomponent of global self-esteem, body image dissatisfaction may influence measures of self-esteem. Stowers and Durm (1996) posit that the association between body image dissatisfaction and self-esteem has been well established. Positive relationships between

body image and self-esteem (Harris, 1995; Guyot, Fairchild & Hill, 1981) and body image

and self-concept (Harris, 1995; Cash & Smith, 1982 as cited in Stowers & Drrm 1996)

have been found.

McCaulay, Mintz, and Glenn (1988) measured social self-esteem defined as level

of comfort in various social situations, and body image dissatisfaction for 176

undergraduate men and women and found a strong negative relationship. Similarly, Abel

and Richards (1996) assessed 84 college men and women on body image dissatisfaction

and self-esteem and found a negative relationship between the two variables for both men

and women. For women only, the effect was stronger for those classified as upper class as

compared to lower class. Body image dissatisfaction seems to have an effect on general

self-esteem as well as the level of comfort one feels in a social situation.

CHAPTER III

Research Methodology

Research Design

The research method was descriptive. The relationship between groups and within groups was determined.

The correlation method was used to determine the relationship between eating behavior and body image and between body image and self-esteem. The group comparison research design compared male and female respondents on eating behavior, body image, and self-esteem.

Participants and Sample Method

The participants of the study consisted of 100 university students, male and female, with age ranging between 15-26 years old split into 4 levels;15-17, 18-20, 21-23, and 24-26. The participants were students from selected university, attending an undergraduate program from first to fourth year level.

Sampling Method

The respondents were students from Assumption University. The researcher contacted the instructors and requested them to have the research questionnaires answered by students who attended the classes. The survey questionnaires were administered during class time, before class, and after class. The sampling technique used was convenience sampling.

Research Instrument

The instrument of the study consisted of three kinds of instruments as follows:

1: Demographic information questionnaire

This brief questionnaire was constructed by the researcher to gather background information of the participants, particularly the demographic characteristics of the participants namely: gender, age, ethnicity, body type, and additional information questionnaire: expected body type, cosmetic surgery, and fast food eating.

2: Eating Behaviors and Body Image Test (EBBIT)

The "Eating Behaviors and Body Image Test" (EBBIT) was designed by Virginia E. Fee and Colette M. Candy in 1998. The EBBIT is a 42-item self-report questionnaire. Factor analysis of the scale resulted in two factors: body image dissatisfaction and restrictive eating (BIDRE) and binge eating behaviors (BEB).

Reliability: According to Fee & Candy (1998) the reliability were established. Internal Consistency for each subscales are as follow:

BIDRE subscale: $r = .91$

BEB subscale: $r = .75$

Total Score: $r = .89$

Validity: Evidence of initial validity was established by analyzing the relationship between EBBIT scores, age, Body Mass Index Ratios (the ratio between weight in kilograms to height in meters squared), and BIS Body Image Dissatisfaction scores. Overall, both body size and body dissatisfaction predicted more maladaptive EBBIT Total scores. EBBIT

total scores were significantly correlated with BIS Dissatisfaction scores ($\underline{r}$ = 6.64, p < .001), BIDRE subscale scored ($\underline{r}$ = .65, p < .001), and BEB subscale scores ($\underline{r}$ = .26, p < .001) (Candy & Fee, 1998).

3: Self-esteem Rating Scales (SERS)

The "Self-esteem Rating Scale" (SERS) by Nugent & Thomas (1993) was used in this study to measure self-esteem. The SERS is a 40-item instrument that was developed to provide a clinical measure of self-esteem that can indicate not only problems in self-esteem but also positive or non-problematic levels.

Scoring: The SERS is scored by scoring the items shown at the bottom of the measure as p/+ positively, and scoring the remaining items (N/-) negatively by placing a minus sign in front of the item score. The items are summed to produce a total score ranging from -120 to +120. Positive scores indicate more positive self-esteem and negative scores indicate more negative levels of self-esteem.

Reliability: The SERS has excellent internal consistency, with an alpha of .97. The standard error of measurement was 5.67.

Validity: The SERS was reported as having good content and factorial validity. The SERS has good construct validity, with significant correlations with the Index of Self-Esteem and the Generalized Contentment Scale (a measure of depression) as predicted, and generally low correlations with a variety of demographic variables, also as predicted.

Procedure of the Study

The researcher conducted the research using the instruments that have been translated into Thai (and translated back into English for language check). Before distributing the questionnaires to the respondents, the researcher sent a letter to the university administrators to ask for permission as well as to consult about the matter of questionnaire distribution. The target classes were identified, respective teachers were approached, and actual distribution of questionnaires took place during class hours. Informed consent procedures were implemented before the respondents started to answer the querstionnaires. Also the participants were given the assurance of confidentiality of data.

Statistical Treatment

The demographic data were examined and recorded. The data derived from the instruments were encoded and treated statistically using the statistical package for Social Science (SPSS). The hypotheses were tested using appropriate statistical tools.

CHAPTER IV

Presentation of Findings

This chapter is divided into two parts (a) the first part consists of the frequencies and description of demographic characteristics and hence will be titled 'Descriptive Statistics,' and (b) the second part includes hypotheses testing under the heading 'Inferential Statistics.'

Descriptive Statistics

Demographic Characteristics

Table 1

Frequency and Percentage Distribution of Gender

		Frequency	Percent
Gender	Male	35	35.0
	Female	65	65.0
Total		100	100

Table 1 shows that of the 100 participants who took part in the research, there were 35 males and 65 females. Majority of the respondents were females (65%).

Figure 1

Frequency and Percentage Distribution of Gender

Figure 1 shows that from the total member of respondents, the majority group is female which is 65% of the total sample size, whereas the percentage of males is 35%.

Table 2

Frequency and Percentage Distribution of Age

		Frequency	Percent
	15 - 17	4	4.0
	18 - 20	42	42.0
Age	21 - 23	37	37.0
	24 – 26	17	17.0
Total		100	100

Table 2 shows the age range of the participants. From the 100 participants, 4 were aged between 15-17, 42 were aged between 18-20, 37 were aged between 21-23, and 17 were those aged between 24-26.

Figure 2

Frequency and Percentage Distribution of Age
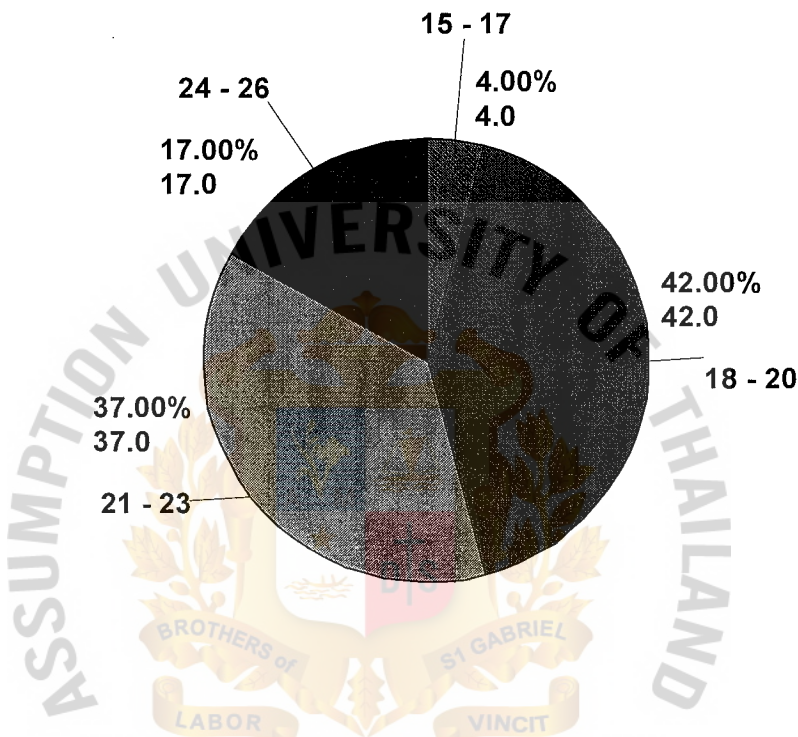
Figure 2 indicates that the highest percentage is 42%, which was the group aged between 18-20 years old. The lowest percentage were aged between 15-17 years old, which is 4%. The percentage of group aged between 21-23 years was 37%, and the percentage of those aged between 21-23 years was 37%.

Table 3

Frequency and Percentage Distribution of Ethnicity

		Frequency	Percent
Ethnicity	Thai-Thai	44	44.0
	Thai-Chinese	41	41.0
	Thai-Indian	8	8.0
	Indian-Indian	1	1.0
	Chinese-Chinese	4	4.0
	Others	2	2.0
Total		100	100

Table 3 shows that majority of the participants were Thai-Thai, numbering 44 from

100 participants, and 41 were Thai-Chinese. And the rest of the ethnicity of the count were

8 Thai-Indian, 1 Indian-Indian, 4 Chinese-Chinese, and 2 were Others.

Figure 3

Frequency and Percentage Distribution of Ethnicity
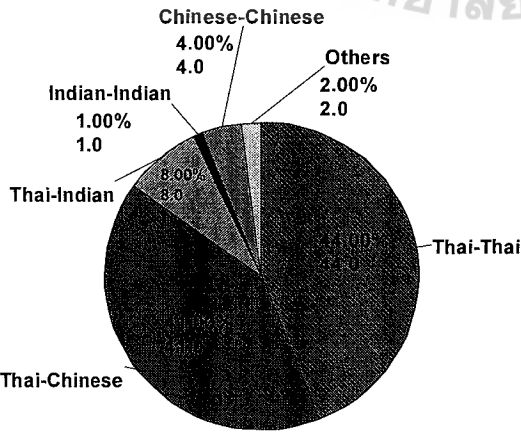
Figure 3 shows that most of the participants were Thai-Thai and Thai-Chinese.

Table 4

Frequency and Percentage Distribution of Body Type

		Frequency	Percent
Body type	Underweight	30	30.0
	Ideal or Normal	46	46.0
	Overweight	24	24.0
Total		100	100

The body type of the respondents were calculated according to their height and weight. The formula for the calculation was weight (kg)/ [height (m)]2 . According to BMI weight status: below 18.5 is underweight, 18.5-24.9 is normal, 25.0-29.9 is overweight, and 30.0 and above is obese. Table 4 shows that from 100 participants, 30 people were underweight, 46 were of ideal or normal weight, and 24 were overweight.

Figure 4

Frequency and Percentage Distribution of Body Type
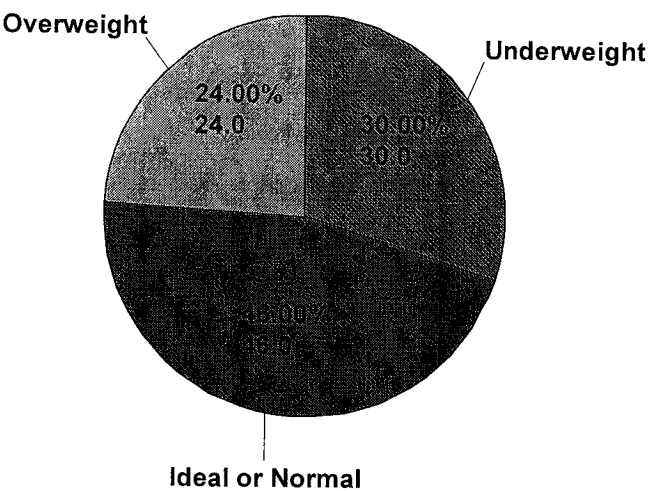
Figure 4 shows that 30% were underweight, 46% were of ideal or normal, and 24% were overweight.

Table 5

Frequency and Percentage Distribution of Expected Body Type

		Frequency	Percent
Expected Body type	Underweight	47	47.0
	Ideal or Normal	37	37.0
	Overweight	16	16.0
Total		100	100

The sample was asked about their ideal weight. The expected body type was calculated from height and expected weight of the participants. Table 5 shows that from

100 participants, 47 people expected to be underweight, 37 expected to be of ideal or normal weight, and 16 expected to be overweight.

Figure 5

Frequency and Percentage Distribution of Expected Body Type
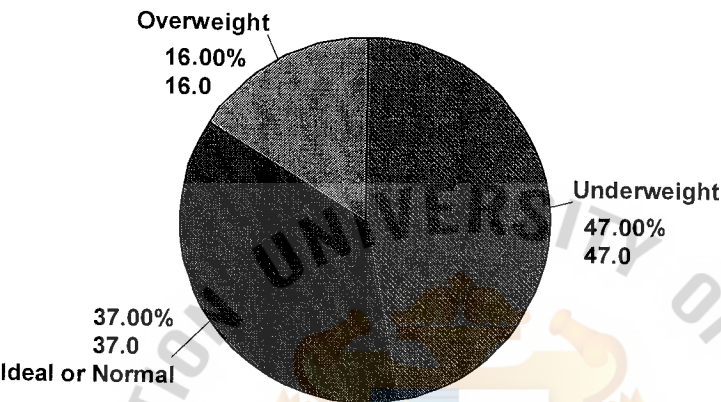
Figure 5 shows that 47% of the participants wanted to have the underweight body type, 30% wanted to have ideal/normal weight, and only 16% wanted to be overweight.

Table 6

Frequency and Percentage Distribution of Cosmetic Surgery

		Frequency	Percent
Cosmetic	Yes	3	3.0
surgery	No	97	97.0
Total		100	100

Table 6 shows that from 100 participants, there were only three people who have had have cosmetic surgery.

Figure 6

Frequency and Percentage Distribution of Cosmetic Surgery
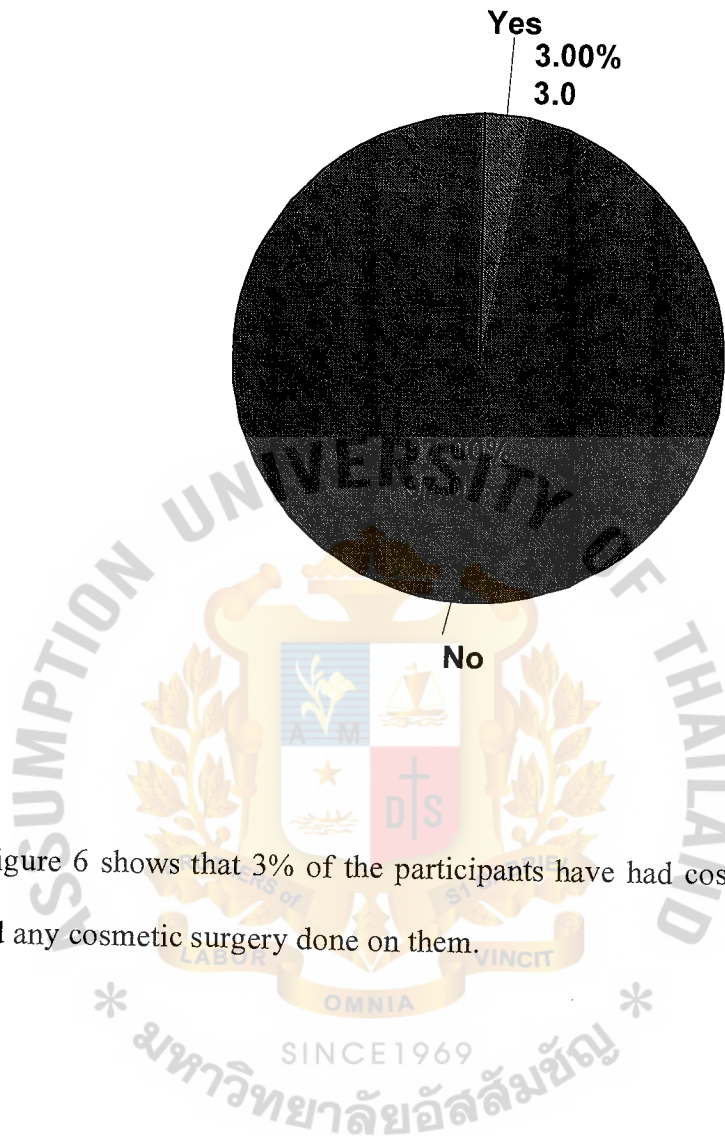
Figure 6 shows that 3% of the participants have had cosmetic surgery; 97% have never had any cosmetic surgery done on them.

Table 7

Frequency and Percentage Distribution of Fast Food Eating per Week

		Frequency	Percent
Eating fast-food per week	Less than once	63	63.0
	1 - 3 times	37	37.0

Table 7 shows that from 100 participants, 63 eat fast food less than once per week while 37 eat fast food 1-3 times per week.

Figure 7

Frequency and Percentage Distribution of Fast Food Eating per Week
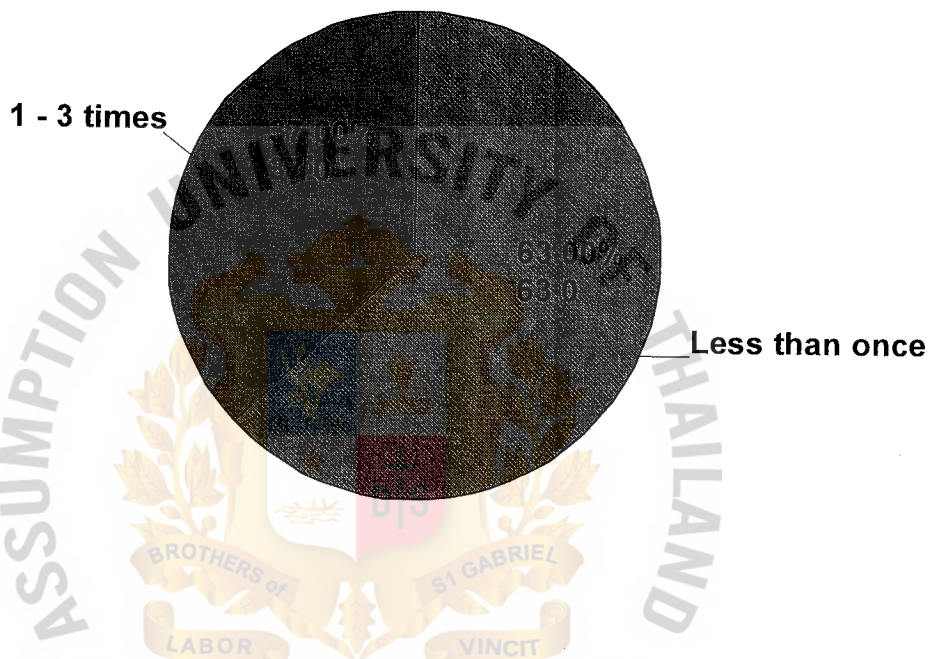
Figure 7 shows that majority (63%) of the participants eat fast food less than once per week whereas the rest (37%) eat fast food 1-3 times per week.

*Body type: calculated from Height and Weight

**Expected body type: calculated from Height and Expected Weight

Note that: From body type and expected body type, it can be seen that respondents expect to be underweight more than of ideal and normal weight.

Increase/Decrease weight
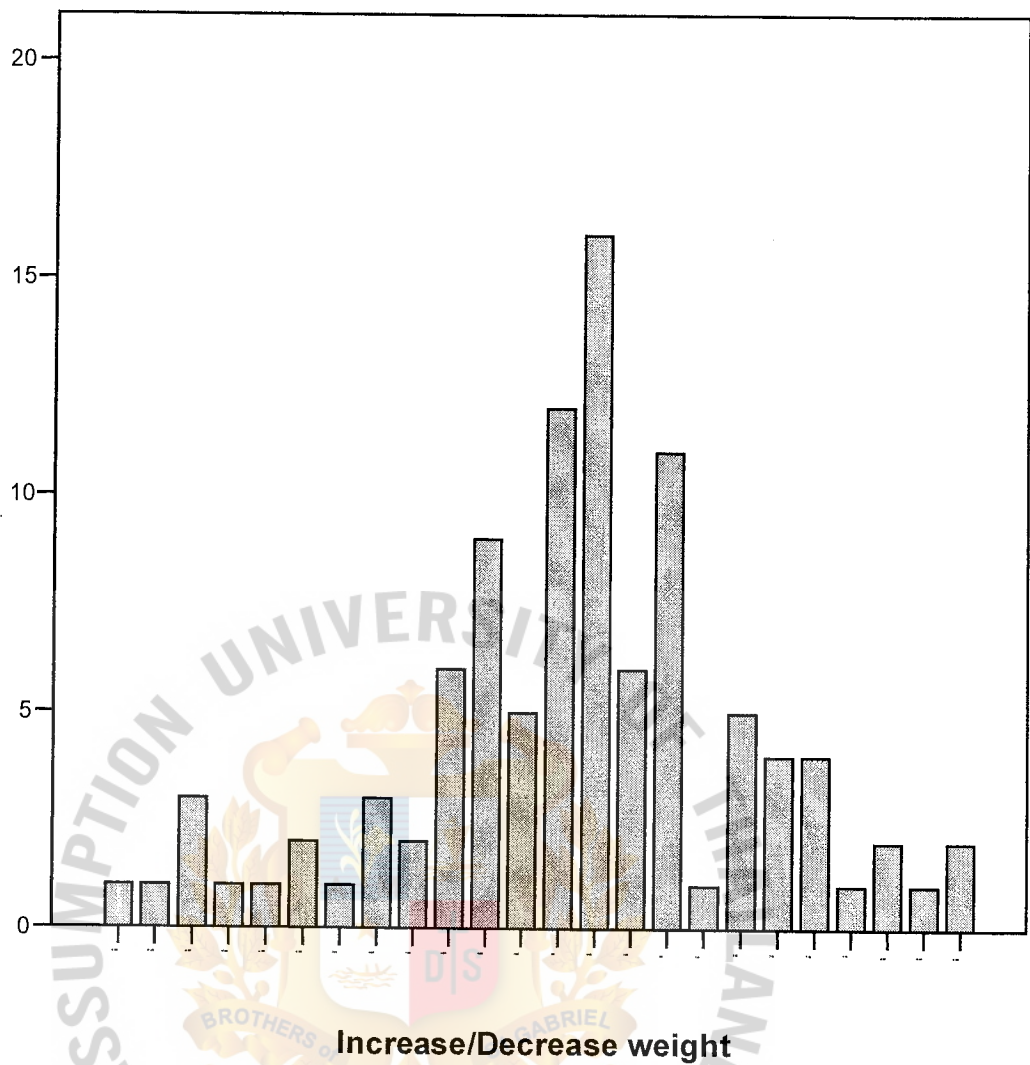
Table 8

Frequency and Percentage Distribution of Desired Weight Change

Decrease weight	Frequency	Percent
1 to 2 kg	22	22.0
3 to 4 kg	17	17.0
5 to 6 kg	15	15.0

Increase weight	Frequency	Percent
1 to 2 kg	6	6.0
3 to 4 kg	4	4.0
5 to 6 kg	5	5.0

7 to 8 kg	5	5.00		9 to 10 kg	2	2.0
9 to 10 kg	3	3.00		13 to 14 kg	1	1.0
11 to 12 kg	1	1.0		15 to 16 kg	2	2.0
13 to 14 kg	1	1.0		Total	20	20.0
15 to 16 kg	4	4.0		Keep weight	Frequency	Percent
26 kg	1	1.0		Keep weight	11	11.0
Total	69	69.0		Total	11	11.0

Table 8 indicates that there were three types of desired weight change: decrease weight, increase weight, and keep weight. For decrease weight, there were 69 people from 100 sample size. Specifically, 22 of the 69 wanted to decrease 1-2 kilograms (kg), 17 people wanted to lose 1-4 kg, 15 wanted to lose 5-6 kg, 5 people wanted to decrease 7-8 kg, etc. And the highest reported kilograms was 26 kg that one person wanted to decrease in weight. The table also shows that 20 persons from 100 participants wanted to increase their weights: 1-2 kilograms for 6 people, 3-4 kilograms for 4 people, 5-6 kilograms for 5 people, 9-10 kilograms for 2 people. It can also be seen that one person wanted to gain 13-14 kilograms and 2 wanted to gain 15-16 kilograms. There were 11 people from the participants that wanted to keep their weight.

Figure 8

Frequency and Percentage Distribution of Desired Weight Change

Decrease weight

- 1 to 2 kg
- 3 to 4 kg
- 5 to 6 kg
- 7 to 8 kg
- 9 to 10 kg
- 11 to 12 kg
- 13 to 14 kg
- 15 to 16 kg
- 26 kg

Increase weight

- 1 to 2 kg
- 3 to 4 kg
- 5 to 6 kg
- 9 to 10 kg
- 13 to 14 kg
- 15 to 16 kg
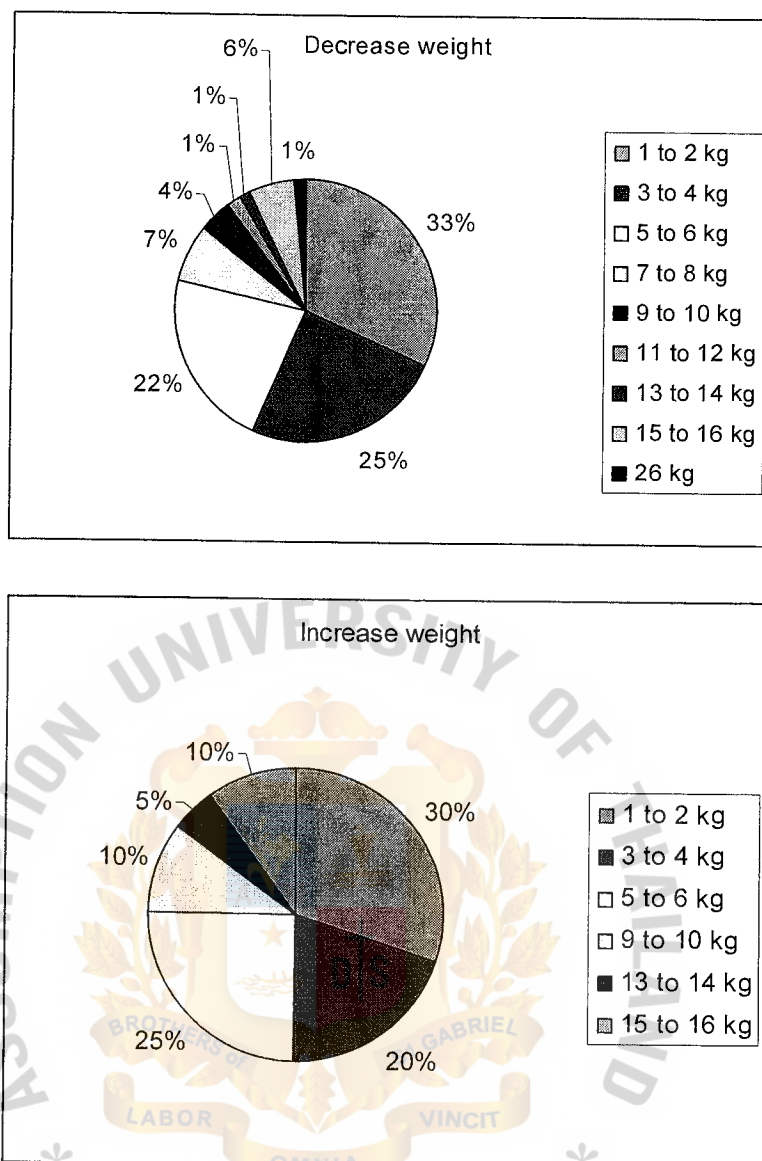
Figure 8 shows the percentage of the participants who wanted to decrease and increase weight. From the decrease weight figure, 33% of 69 participants wanted to decrease 1-2 kilograms (kg), 25% wanted to decrease 3-4 kg and 5-6 kg for 22%, 7% wanted to decrease 7-8 kg, 6% wanted to decrease 15-16 kg, 6% wanted to decrease 9-10 kg, and the rest at 1 % wanted to decrease by 11-12 kg, 13-14 kg, and 26 kg.

From the Increase weight figure, 30% of 20 participants wanted to increase 1-2 kg, 20% wanted to increase 3-4 kg, and 5-6 kg for 25%. As to the ther participants, 10%

wanted to increase by 9-10 kg, and another 10% by 15-16 kg, while only 5% wanted to gain 13-14 kg.

Table 9

Frequency and Percentage Distribution of Gender and Change Body Type Crosstabulation

		Don't want to change body type	Want to change body type					Total
			Under weight to Ideal	Ideal to Over weight	Over weight to Ideal	Ideal to Under weight	Over weight to Under weight	
			Frequency and Percentage					
Gender	Male	23	3	5	4	0	0	35
	Female	37	1	0	6	18	3	65
Body type	Underweight	26	4	0	0	0	0	30
	Ideal or Normal	23	0	5	0	18	0	46
	Overweight	11	0	0	10	0	3	24
Total		60	4	5	10	18	3	100

Table 9 shows that 60 people did not want to change their body type. Out of this group, there were 23 males and 37 females; 26 were underweight, 23 were of ideal/normal weight, and 11 were overweight. Out of a total sample of 100, 40 participants wanted to change their body type. Of the group, 4 of the underweight participants (3 were males and 1 were female), wanted to change from underweight to ideal weight; 5 of the 40

participants wanted to change from ideal weight to overweight (all were males); 10 overweight participants wanted to change to ideal weight, (4 and 6 females); 18 were of ideal weight but all (18 females) wanted to be underweights. And from overweight to underweight, there were 3 participants, and all were females as well. So from this table, the researcher found that only males wanted to be overweight.

Figure 9

Frequency and Percentage Distribution of Gender and Change Body Type Crosstabulation
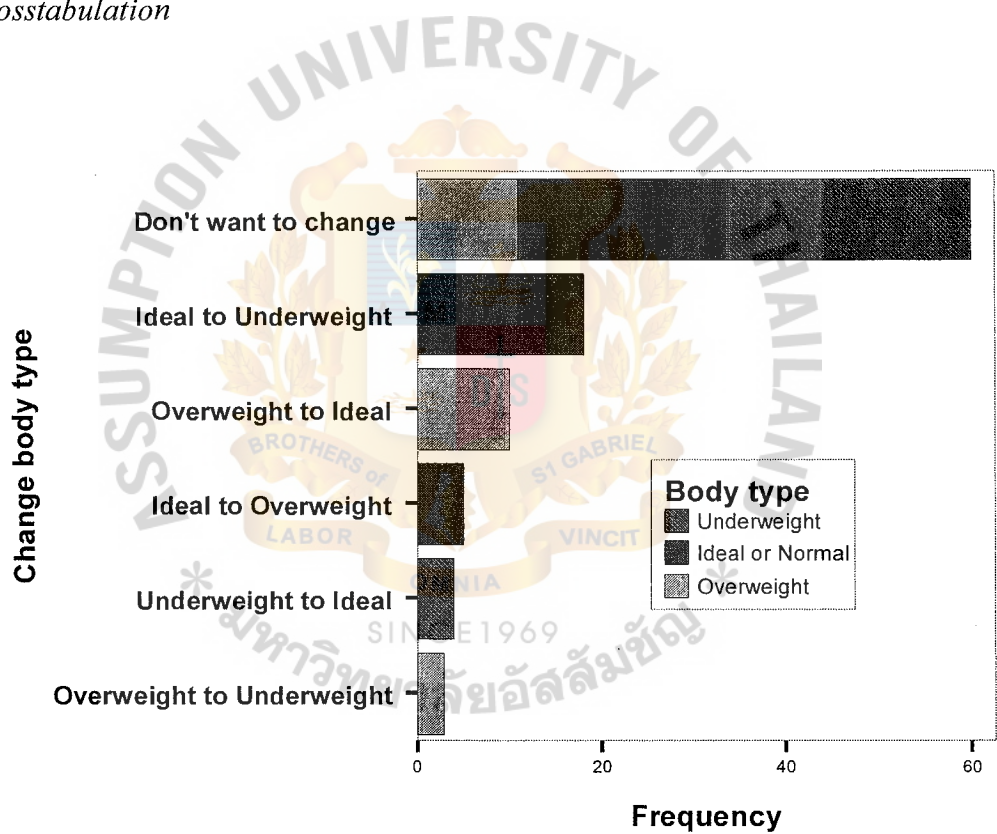
Figure 9 shows that from the participants who did not want to change their body type, most of them were underweight. From the participants who wanted to change their body type, 40% wanted to change the body type, and so did 4% of the underweight participant, whereas 10% wanted to change to be of ideal weight, From ideal to

underweight, 18% all of them were females. And from overweight to underweight there were 3%, and all of them were females as well.

Table 10

Frequency and Percentage Distribution of Mean of Height & Weight Different, Gender, Age, and Body Type

		Height				Weight			
		Mean	S.D.	Mini-mum	Maxi-mum	Mean	S.D.	Mini-mum	Maxi-mum
Gender	Male	173.9	5.6	162	183	68.5	11.5	50	90
	Female	160.1	5.8	150	178	50.4	8.2	40	76
Age	15 - 17	165.8	10.9	155	180	57.5	15.2	45	76
	18 - 20	166.5	9.2	150	183	59.9	14.0	40	90
	21 - 23	164.0	8.1	150	181	52.6	9.6	42	81
	24 - 26	162.9	8.6	150	182	57.8	14.0	41	88
Body type	Underweight	161.4	7.2	151	180	45.6	4.9	40	59
	Ideal/Normal	164.4	7.9	150	180	55.3	7.8	44	70
	Overweight	170.3	9.6	150	183	73.3	10.3	53	90

Table 10 shows that the average height of the male students was 173.9 cm, and an average weight of 68.5 kilograms (kg). On the other hand, the average height of female students was 160.1 cm and average weight of 50.4 kg. For the age range group between 15-17 years old, the mean height was 165.8 cm and the mean weight was 57.5 kg; for the 18-20 age range, the mean height was 166.5 cm and weight 59.9 kg. 21-23 years old, mean height was 164.0 cm and weight was 52.6 kg. For age range 24-26, the mean height was

162.9 cm and mean weight was 57.8 kg. For the body type, underweight participants' mean height was 161.4 cm and mean weight was 45.6 kg. For the ideal/normal body type ,mean height was 164.4 cm and weight was 55.3 kg. And lastly, the overweight body type mean height was 170.3 cm and mean weight was 73.3 kg.

Table 11

Frequency and Percentage Distribution of Gender, Age, Body Type and Self-Esteem Crosstabulation

Count

		Self esteem			Total
		Negative	Neutral	Positive	
		Frequency and Percentage			
Gender	Male	6	1	28	35
	Female	4	0	61	65
Age	15 - 17	0	0	4	4
	18 - 20	6	1	35	42
	21 - 23	4	0	33	37
	24 - 26	0	0	17	17
Body type	Underweight	3	0	27	30
	Ideal or Normal	4	1	41	46
	Overweight	3	0	21	24
Total		10	1	89	100

Table 11 shows that of the 35 of male participants, 28 had positive self-esteem, 6 had negative self-seteem, and 1 neutral. While for the 65 females, 61 had positive self-esteem, and 4 had negative self-esteem.

For age group between 15-17 years old, 4 out of 4 had positive self-esteem; for age 18-20, there were 42 partcipants where 35 had positive self-esteem, 6 had negative and I neutral. For age 21-23, there were 37 participants, of whom 33 positive self-esteem, and 4 had negative self-esteem. And for age 24-26, there were 17 participants and all of them had positive self-esteem.

For body type, for the underweight, there were 30 participants, of whom 27 had positive self-esteem, and 3 had negative self-esteem. For ideal or normal, there were 46 participants, whereas 41 had positive self-esteem, and 4 had negative and 1 had neutral self-esteem. For overweight, there were 24 participants, whereas 21 had postivie self-esteem and 3 had negative self-esteem.

So from 100 participants, the test of their self-esteem: 89 were postive and 10 were negative and 1 were neutral.

Figure 10

Frequency and Percentage Distribution of Gender, Age, Body Type and Self-Esteem

Crosstabulation
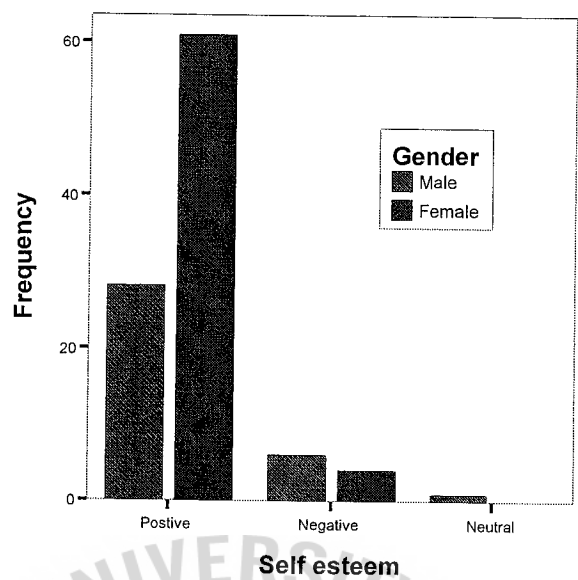
Figure 10 on gender and self-esteem, shows that there were more respondents who had positive self-esteem than negative self-esteem.
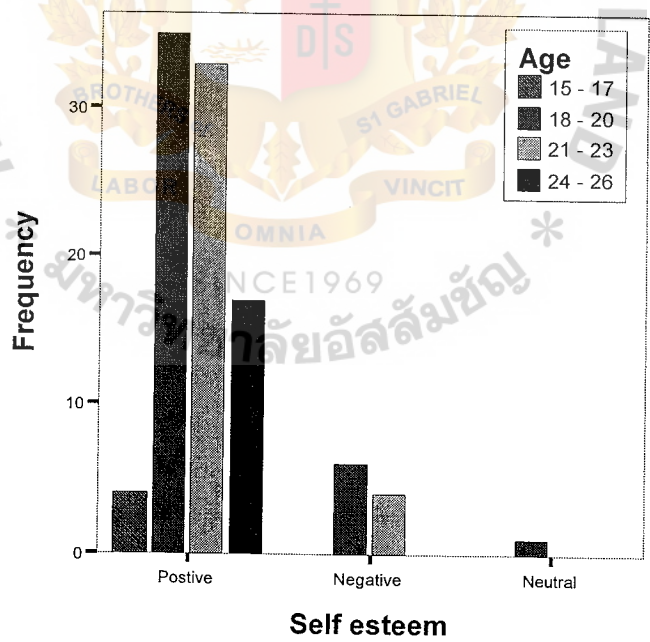
With regard to age & self esteem the figure shows that for positive self esteem, age group between 18-20 years old, had the most positive self-esteem, while age 15-17 had the

lowest positve self-esteem. For negative self-esteem, the age groups 18-20 and 21-23 reported having the most negative self-esteem.
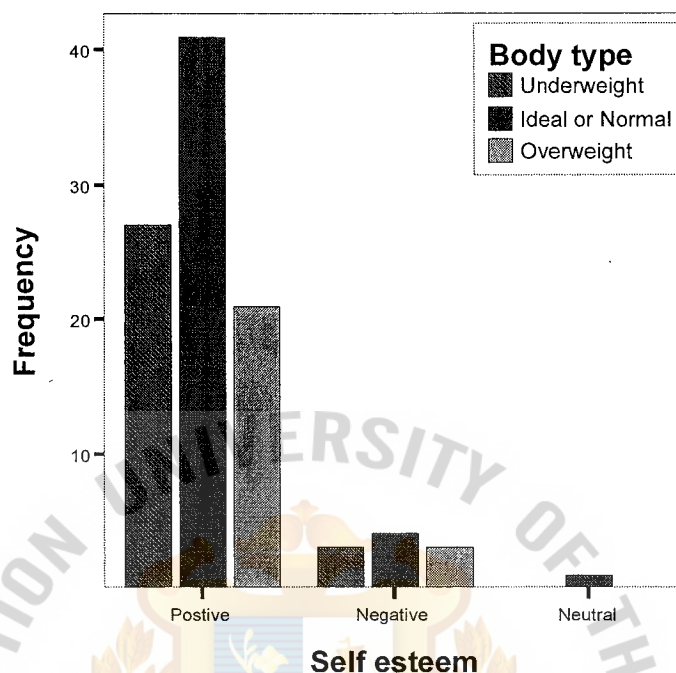
Figure for body type & self-esteem, for both positive and negative self-esteem, the participants with ideal/normal weight had the highest percentages.

Inferential statistics

Assumption Testing

According to Sheridan and Lyndall (2003), each statistical test has certain assumptions that must be met prior to analysis. The accuracy of test interpretation depends on whether assumptions are violated. Moreover, the decision between parametric and non-parametric tests depends on the measurement of data: nominal, ordinal, interval, or ratio scales, and the violations of the assumptions of parametric tests. Thus, the assumption

testing is necessary for choosing proper statistical tests and producing accurate results and interpretations.

Normal distribution is one of several generic assumptions in all types of t-test, which is a parametric test. If this assumption is violated, the non-parametric test is used instead, although the data measured on scale is interval or ratio. To assess the normality of distribution by groups, the value of skewness, kurtosis, and the Shapiro-Wilks statistics are used.

Skewness and kurtosis are related to the shape of the distribution, and are used with interval and ratio level data. If the observed distribution is exactly normal, values for skewness and kurtosis are zero. Positive values for skewness indicate a positive skew and vice versa. While a positive or negative value for kurtosis indicate a peak (leptokurtic) and flat (platykurtic), respectively. If the significant level of the Shapiro-Wilks statistic, which is used for testing normality with the sample size less than one hundred, is greater than .05, then normality is assumed.

Table 12

Normality Testing Using Skewness and Kurtosis

Eating Behavior by groups			Statistic	Std. Error
Gender	Male	Skewness	.036	.398
		Kurtosis	.650	.778
	Female	Skewness	.307	.297
		Kurtosis	-.050	.586
Age	15-20*	Skewness	.485	.350

			Statistic	Std. Error
		Kurtosis	-.155	.688
	21 - 23	Skewness	.409	.388
		Kurtosis	.527	.759
	24 - 26	Skewness	-.107	.550
		Kurtosis	.298	1.063
Body type	Underweight	Skewness	.534	.427
		Kurtosis	.052	.833
	Ideal or Normal	Skewness	-.439	.350
		Kurtosis	.586	.688
	Overweight	Skewness	1.250	.472
		Kurtosis	1.092	.918
Eating Behavior		Skewness	.400	.241
		Kurtosis	.264	.478
Self-esteem by groups			Statistic	Std. Error
Gender	Male	Skewness	-.140	.398
		Kurtosis	-.761	.778
	Female	Skewness	-.064	.297
		Kurtosis	-.975	.586
Age	15 – 20*	Skewness	-.106	.350
		Kurtosis	-.501	.688
	21 - 23	Skewness	.024	.388
		Kurtosis	-.695	.759
	24 - 26	Skewness	-.446	.550
		Kurtosis	-.125	1.063

Body type	Underweight	Skewness	-.352	.427
		Kurtosis	-.688	.833
	Ideal or Normal	Skewness	-.058	.350
		Kurtosis	.057	.688
	Overweight	Skewness	.114	.472
		Kurtosis	-1.371	.918
Self-esteem		Skewness	-.123	.241
		Kurtosis	-.627	.478
Body Image		Skewness	-.101	.241
		Kurtosis	-1.001	.478

*This level is combined 15-17 and 18-20 together.

Table 13

Normality Testing Using the Shapiro-Wilk Statistics

Eating Behavior by groups		Shapiro-Wilk		
		Statistic	df	Sig.
Gender	Male	.969	35	.417
	Female	.986	65	.669
Age	15 – 20*	.968	46	.226
	21 – 23	.973	37	.505
	24 – 26	.988	17	.996
Body type	Underweight	.969	30	.516
	Ideal or Normal	.962	46	.143

		.881	24	.009
	Overweight	.881	24	.009
Self-esteem by groups		**Statistic**	**df**	**Sig.**
Gender	Male	.974	35	.572
	Female	.966	65	.067
Age	15 – 20*	.980	46	.613
	21 – 23	.981	37	.761
	24 – 26	.953	17	.505
Body type	Underweight	.955	30	.228
	Ideal or Normal	.987	46	.887
	Overweight	.914	24	.044
Eating Behavior		.985	100	.296
Body Image		.966	100	.012
Self-esteem		.982	100	.201

*This level is combined 15-17 and 18-20 together.

Table 14

Homogeneity of Variances Testing for ANOVA Test

	Levene Statistic	df1	df2	Sig.
Eating behavior*Age	.434	2	97	.649
Self-esteem*Age	.614	2	97	.543
Self-esteem*Body type	.864	2	97	.425

Testing Hypothesis 1

H1:   There are significant differences in the eating behavior of university students based
on gender, age, and body type.

Sub-hypotheses:

H1.1:   There is a significant difference in the eating behavior of university students
between male and female.

This hypothesis of difference have two independent groups: male and female.
Eating behavior is the dependent variable with ratio scale. From Table 12 and 13, the
distributions of eating behavior data grouped by gender are assumed normal. Thus,
independent t-test can be done.

Table 15

Independent Samples Test for Hypothesis 1.1

Eating Behavior	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	2.974	.088	-2.774	98	.007	-4.01	1.444	-6.872	-1.141

Equal variances not assumed		-3.00 5	86.572	.003	-4.01	1.333	-6.65 7	-1.35 7

Given Levene's test has a probability greater than .05 (*p* >.05) from table 15, the population variances can be assumed as relatively equal. Therefore, the t-value, degree of freedom and two-tail significance for the equal variance can be used to determine whether eating behavior differences exit. The two-tail significance for the equal variance indicates that the null hypothesis is rejected (*p* <.05). Thus, there is a significant difference in the eating behavior of university students between male and female.

Table 16

Mean Table of Difference in Eating Behavior

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Eating Behavior	Male	35	14.69	5.687	.961
	Female	65	18.69	7.448	.924

Looking at the meaning Table 16, females scored higher than males in eating behavior, which indicates that females were fuzzier in eating than males.

H1.2:   There is a significant difference in the eating behavior of university students between levels of age.

This hypothesis of difference is related to three independent groups for three levels of age: 15-20, 21-23, 24-26. Note that the level age 15-20 is a combination of level age 15-17 and 18-20, because level age 15-17 has a relative low frequency and percentage (4 respondents). Eating behavior is the dependent variable which is a ratio scale. From Table 12 and 13, the distributions of eating behavior data grouped by levels of age are assumed normal. From Table 14, Levene's test for homogeneity of variances is not significant ($p = .649 > .05$); this means that the population variances for each independent group are approximately equal. Thus, the one-way between groups ANOVA can be done.

Table 17

One-Way Between Groups ANOVA for Hypothesis 1.2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	144.490	2	72.245	1.439	.242
Within Groups	4870.100	97	50.207		
Total	5014.590	99			

From Table 17, the F-probability value is greater than .05 ($p = .242 > .05$); the null hypothesis is accepted. That means there is no significant difference in the eating behavior of university students between levels of age. Thus, the post-host test is unnecessary in this case.

H1.3:   There is a significant difference in the eating behavior of university students between levels of body type.

This hypothesis of difference is related to three independent groups for three kinds of body types: underweight, ideal/normal, and overweight. The dependent variable is eating behavior which is a ratio scale. From Table 12 and 13, the distributions of eating behavior data for each kind of body type, except for overweight, are assumed normal.

In the case of eating behavior for overweight, the normal distribution is violated. Thus, the Kruskal-Wallis test, which is a non-parametric test, is used.

Table 18

Kruskal Wallis Test for Hypothesis 1.3

	Eating Behavior
Chi-Square	3.581
df	2
Asymp. Sig.	.167

The obtained Kruskal-Wallis statistic in Table 18 is interpreted as a chi-square value and the significant value is greater than .05 ($p > .05$). It shows that the null hypothesis is accepted. This means that there is no significant difference in the eating behavior of university students between kinds of body type.

Testing Hypothesis 2

H2: There are significant differences in the self-esteem of university students based on gender, age, and body type.

Sub-hypotheses.

H2.1: There is a significant difference in the self-esteem of university students between male and female.

This hypothesis tests the difference between two independent groups: male and female. The dependent variable is self-esteem, which is a ratio scale. This hypothesis wants to test whether self-esteem scales of male is equal to female. From Table 12, the skewness and kurtosis value is relatively low for each group. From Table 13, the significance value of the Shapiro-Wilk statistics is greater than .05 ($p > .05$). Thus, the distributions of self-esteem data for each independent group are assumed normal. Therefore, independent t-test can be used.

Given Levene's test in the following Table 19, probability value is less than .05 ($p < .05$), the population variances are not equal. Therefore, the t-value, degree of freedom, and two-tail significance for the 'equal variances not assumed' can be used to determine whether self-esteem differences exit. The two-tail significance indicates that the null hypothesis is accepted ($p > .05$). Thus, there is no significant difference in the self-esteem scales of university students between male and female.

Table 19

Independent Samples Test for Hypothesis 2.1

	Levene's Test for Equality of Variances		t-test for Equality of Means						
					Sig. (2-tailed)	Mean Differen ce	Std. Error Differen ce	95% Confidence Interval of the Difference	
	F	Sig.	t	df				Lower	Upper
Equal variances assumed	5.073	.027	-.130	98	.897	-.79	6.043	-12.779	11.205
Equal variances not assumed			-.118	53.583	.906	-.79	6.647	-14.116	12.543

H2.2:   There is a significant difference in the self-esteem of university students between levels of age.

This hypothesis tests the difference of three independent groups for three levels of age: 15-20, 21-23, 24-26. Self-esteem is the dependent variable which is a ratio scale. From Table 12 and 13, the distributions of eating behavior data grouped by levels of age are assumed normal. From Table 14, Levene's test for homogeneity of variances is not significant (p = .543 > .05), which means that the population variances for each independent group are approximately equal. Thus, the one-way between groups ANOVA can be used.

Table 20

One-Way Between Groups ANOVA for Hypothesis 2.2

Self-esteem

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7258.926	2	3629.463	4.747	.011
Within Groups	74167.914	97	764.618		
Total	81426.840	99			

From Table 20, the F-probability value is less than .05 (p =.011 <.05), thus the null hypothesis is rejected. That means there is a significant difference in the self-esteem of university students between levels of age.

Table 21

Post-Hoc Test for Hypothesis 2.2

Dependent Variable: Self-esteem

Tukey HSD

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
15-20	21-23	-3.97	6.106	.792
	24-26	-23.94(*)	7.849	.008
21-23	15-20	3.97	6.106	.792
	24-26	-19.97(*)	8.102	.041

24-26	15-20	23.94(*)	7.849	.008
	21-23	19.97(*)	8.102	.041

* The mean difference is significant at the .05 level.

From this table, in the column labeled *Mean Difference (I-J)*, the mean difference values accompanied by the asterisks indicate the mean difference is significant at the .05 level which age levels differ significantly from each other at the .05 level of significance. The results indicate that the age level 24-26 is significantly different from both the age level 15-20 and 21-23. The age levels 15-20 and 21-23 do not differ significantly. Self esteem was more positve to the age group 24-26 compared to 15-20 and 21-23.

H2.3: There is a significant difference in the self-esteem of university students between kinds of body type.

This hypothesis tests the difference related to three independent groups for three kinds of body types: underweight, ideal/normal, and overweight. The dependent variable is self-esteem, which is a ratio scale. From Table 12 and 13, the distributions of self-esteem data for each kind of body type, except for overweight, are assumed normal. In the case of self-esteem for overweight, the normal distribution is violated. Thus, the Kruskal-Wallis test, which is a non-parametric test, is used.

Table 22

Kruskal Wallis Test for Hypothesis 2.3

	Self-esteem
Chi-Square	1.102
Df	2
Asymp. Sig.	.576

The obtained Kruskal-Wallis statistic in the Table 22 shows that the significant value is greater than .05 ($p > .05$). It indicates that the null hypothesis is accepted. That means there is no significant difference in the self-esteem of university students between kinds of body type.

H3:   There is a significant relationship between eating behavior and body image.

Figure 11

Scatter Plot Of Eating Behavior And Body Image Variables
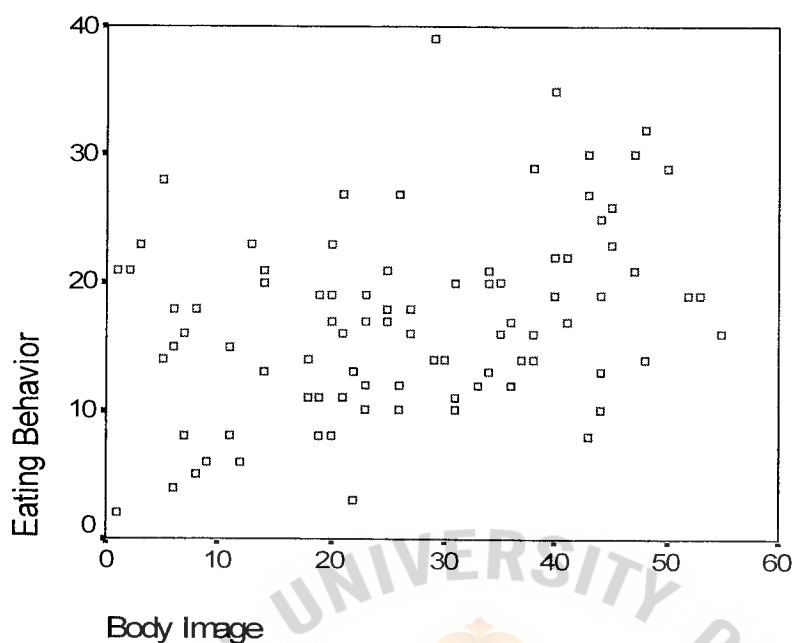
This hypothesis test association involves two variables measured by ratio scales. From Table 12 and 13, body image distribution is not normal. Moreover, from Figure 11, there is no linear relationship between eating behavior and body image. The assumption of homoscedasticity has been violated because the dots are not clustered uniformly around the regression line. Once the assumptions of Pearson correlation coefficient have been violated, the Spearman's rank order correlation can be done.

Table 23

Spearman's Rank Order Correlation Testing for Hypothesis 3

			Eating Behavior	Body Image
Spearman's rho	Eating Behavior	Correlation Coefficient	1.000	.329(**)
		Sig. (1-tailed)	.	.001
		N	100	100
	Body Image	Correlation Coefficient	.329(**)	1.000
		Sig. (1-tailed)	.001	.
		N	100	100

** Correlation is significant at the 0.01 level (2-tailed).

As see in Table 23, the Spearman's rank order correlation (.329) is significant. Moreover, the result confirms that a weak to moderate positive relationship exits between eating behavior and body image, which means that students who scored higher in eating behavior also scored higher in body image.

H4:   There is a significant relationship between body image and self-esteem.

This hypothesis of association involves two variables measured by ratio scales. As mentioned earlier, body image data is not normally distributed. Moreover, from the Figure 12, there is no linear relationship between body image and self-esteem. The assumption of homoscedasticity has been violated because the dots are not clustered uniformly around the regression line. Once the assumptions of Pearson correlation coefficient have been violated, the Spearman's rank order correlation can be done.

Figure 12

Scatter Plot Of Body Image And Self-Esteem Variables
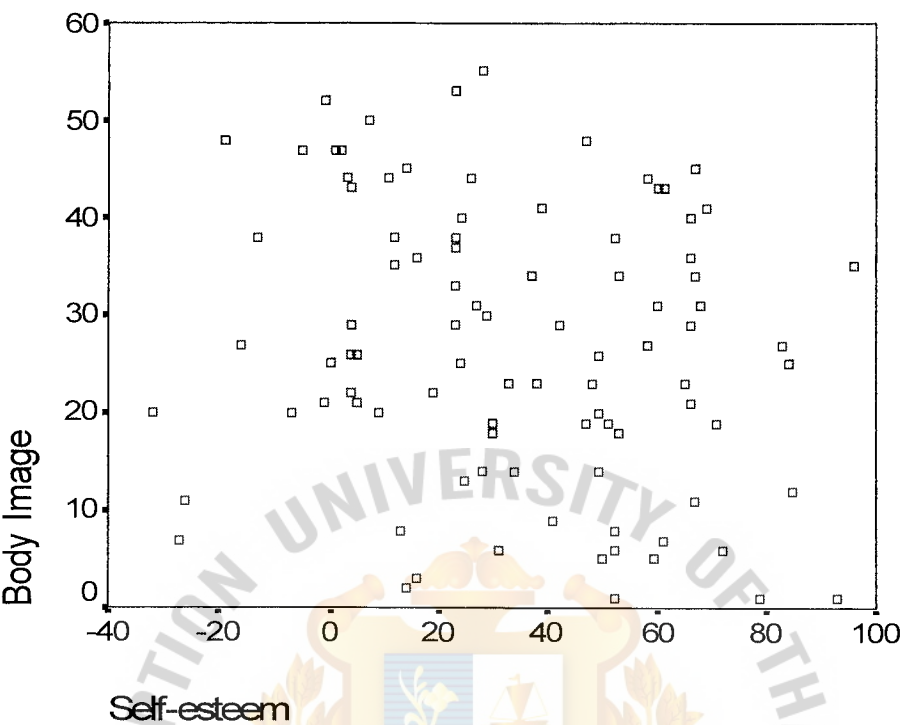
Table 24

Spearman's Rank Order Correlation Testing for Hypothesis 4

			Body Image	Self-esteem
Spearman's rho	Body Image	Correlation Coefficient	1.000	-.201(*)
		Sig. (1-tailed)	.	.045
		N	100	100
	Self-esteem	Correlation Coefficient	-.201(*)	1.000
		Sig. (1-tailed)	.045	.

N		100	100

* Correlation is significant at the 0.05 level (2-tailed).

From Table 24, it can be seen that the Spearman's rank order correlation (-.201) is significant. Moreover, the result confirms that a weak negative relationship exits between body image and self-esteem. The students who are more concerned about their body image scored low in self-esteem and those who scored low in body image have high in self-esteem.

Table 25

Summary for Inferential Statistics

Hypothesis	Reject / Accept Ho	Results
H1.1	Reject Ho	There is a significant difference in the eating behavior of male and female students of Assumption University.
H1.2	Accept Ho	There is no significant difference in the eating behavior of students of Assumption University between levels of age.
H1.3	Accept Ho	There is no significant difference in the eating behavior of Assumption University students between body types.
H2.1	Accept Ho	There is no significant difference in the self-esteem of Assumption University students between male and female.

H2.2	Reject Ho	There is a significant difference in the self-esteem of Assumption University students between levels of age. The age level 24-26 is significantly different from both the age level 15-20 and 21-23. The age levels 15-20 and 21-23 do not differ significantly.
H2.3	Accept Ho	There is no significant difference in the self-esteem of Assumption University students between body types.
H3	Reject Ho	There is a weak to moderate positive relationship between eating behavior and body image.
H4	Reject Ho	There is a weak negative relationship between body image and self-esteem.
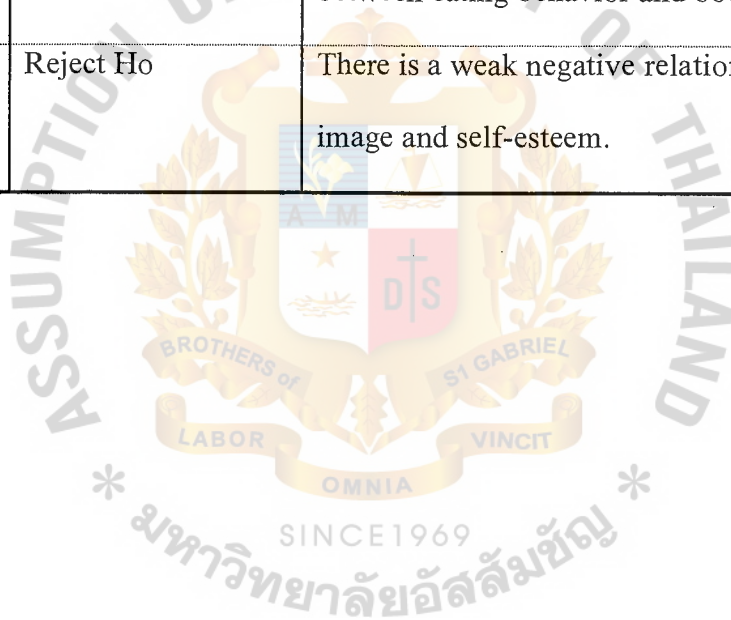
CHAPTER V

Summary of Findings, Discussion, Conclusion, and Recommendations

The purpose of this study was to explore the eating behavior of adolescents, particularly university students, based on demographic variables such as gender, age and body type. Moreover, the study attempted to understand the relationship btween eating behavior and body image of the adolescents. The study attempted to examine the relationship between body image and self-esteem of students as well as to determine the self-esteem based on demographic variables gender, age and body type of the selected university.

A descriptive research method was used for this study. The respondents were all undergraduate students from Assumption University.

A three-part questionnaire served as the research instrument in the study. Each questionnaire consisted of the following: demographic questionnaire, Eating Behaviors and Body Image Test (EBBIT), and Self-Esteem Scales (SERS).

Summary of the Findings

The findings of this research can be summarized as follows:

1. A Total of 100 respondents provided the data for this study. Majority of the respondents were females (65%) while 35% were males. Most of the respondents (42%) were in the age group of 18-20 years old, 37% were in the 21-23 years old group, 17% in the 24-26 years old group, and only 4% of the respondents were in the 15-17 years old group. The majority of the respondents were Thai-Thai (44%),

and Thai-Chinese (41%), and the rest were Thai-Indian (8%), Indian-Indian (1%), Chinese-Chinese (4%), and Other (2%). From 100 respondents, 46% were of ideal/normal weight, 30% were underweight, and 24% were overweight. However, 46% of respondents desired to be underweight and 37% wanted to have ideal or normal weight, while only 16% of respondents wanted to be overweight. It was also found that there were only 3 respondents out of 100 had the cosmetic surgery. And from 100 respondents, 63 of them were eating at fast foods less than once a week and 37 respondents were at eating fast foods 1-3 times per week.

2. The majority of respondents (69%) wanted to decrease their weight. Twenty-two respondents (22%) out of these 69 respondents wanted to decrease their weight by 1-2 kilograms; 17% of them wanted to decrease by 3-4 kilograms and 15% of respondents wanted to decrease their weight by 5-6 kilograms. There were 20 respondents (20%) who wanted to increase their weight. Of these, 6% wanted to increase their weight by 1-2 kilograms; 4 respondents (4%) wanted to increase their weight by 3-4 kilograms, whereas 5 respondents (5%) wanted to increase by 5-6 kilograms. There were only 11 respondents (11%) wanted to keep their weight.

3. Out of the total number of respondents, 60% did not want to change their body type. Of these, there were 23 males and 37 females. Out of 100, 40% of participants wanted to change their body type. Of the 4 underweight participants, 3 were males and 1 was female, who wanted to be change from underweight to ideal weight. Five of them wanted to change from ideal weight to overweight and all of them were males. Ten overweight participants wanted to change to be of ideal weight, 4 were males and 6 were females. From ideal to underweight were the

highest percentage of 18% of the 40 participants, and all of them were females. And from overweight to underweight were 3 participants and all of them were females as well. So from this table, the researcher found that only males wanted to be overweight.

4. There is a significant difference in the eating behaviors of Assumption University students between male and female.

5. There is no significant difference in the eating behaviors of Assumption University students between levels of age.

6. There is no significant different in the eating behaviors of Assumption University students between body types.

7. There is no significant difference in self esteem of Assumption University students between male and female.

8. There is a significant difference in the self-esteem of Assumption University students between levels of age. The age level 24-26 is significantly different from both the age level 15-20 and 21-23. The age levels 15-20 and 21-23 do not differ significantly.

9. There is no significant difference in the self-esteem of Assumption University students between body types.

10. There is a weak to moderate positive relationship between eating behavior and body image.

11. There is a week negative relationship that exists between body image and self-esteem.

Discussion of Findings

The findings indicated that the differences between age level, and body types had no significant effect in the eating behaviors of the students at Assumption University. This means that the eating behavior of the students at Assumption University does not differ on one's gender, or body types.

In the studies by Fallon and Rozin (1985) and Tiggermann (1992), the researchers found that adolescent girls were more likely to be less satisfied with their weight than adolescent boys. Most girls would be satisfied if they were underweight. These results were supported in this study. In the current study, the researcher found that there is a significant differences in the eating behavior of students between males and females; that only male students wanted to be overweight and that none of the female students wanted to be overweight. Most of the females also preferred to be underweight or thinner than they already are.

There is a significant difference in the self-esteem of Assumption University students between levels of age. The results indicated that the age level 24-26 is significantly different from both the age level 15-20 and 21-23. The age levels 15-20 and 21-23 do not differ significantly. So the older the respondents, the higher is their self-esteem. According to Sahlstein and Allen (2002) found that as age increased, the gender difference in favor of boys increased. This implies that between childhood and adolescence there might be a decrease in girl's self-esteem and or an increase in boy's self-esteem.

Prior research by Garner and Garfinkel (1985) stressed that withdrawal from dieting can produce intolerable symptoms such as rapid weight gain, physical and mental pain, and deep distress in combination with low self-esteem. Moreover, McCauley, Minthz, and Glenn (1988) and similarly to Abel and Rechards (1996) found a negative relationship between body image dissatisfaction and self-esteem for both men and women.

In this study the result confirmed that a weak negative relationship exists between body image and self esteem. That means that the more the respondents worry about their body image, the less self- esteem they have about themselves. With high body image concerns, there is less self-esteem. Franzoi and Shields (1984) suggested that physical self-worth (i.e., body-esteem) is one component of self-esteem that measures constructs such as perceived sport competence, physical condition, attractiveness, and weight concern. As a subcomponent of global self-esteem, body image dissatisfaction may influence measures of self-esteem. Stowers and Durm (1996) posit that the association between body image dissatisfaction and self-esteem has been well established. Positive relationships between body image and self-esteem (Harris, 1995; Guyot, Fairchild & Hill, 1981) and body image and self-concept (Harris, 1995; Cash & Smith, 1982 as cited in Stowers & Drrm 1996) have been found.

Conclusion

The present study confirmed that there is no difference in eating behavior between the levels of age. And the older the participants, the more self-esteem they have. Only male students wanted to be overweight while majority of the female students at Assumption University preferred to be underweight than overweight. However, more than half of all the respondents do not want to change their body type. Those who wanted to change their body type, did want to change to be underweight.

A moderate positive relationship was found between eating behavior and body image and a weak negative relationship was found to exist between body image and self-esteem. However, the self-esteem between male and female students at Assumption University were not significantly different.

Recommendations for Further Study

The study puts forth the following recommendations:

1. This study only focused on Assumption University students; future researcher could try other universities in Bangkok or outside of Bangkok.

2. Some other demographic variable such as parents' income, family background, etc. were not factored into this demographic profile. So other researchers could add these and find differences in these factors.

3. As study was a time limited, future studies should attempt longitudinal approach as this would greatly enhance the knowledge about eating behavior, body image and self-esteem among students. Moreover, future studies could try to find out the relationship between eating behavior, body image and self-esteem among pre-adolescents or among adult/working people.

4. The future researcher may also use additional variables on health-related, cultural context, academy achievement, administrative policy in university, etc.

5. Assumption university counselors may also use this results to raise students' awareness in too much concern about body image and the relationship between the eating behavior, body image, and self-esteem among the students at Assumption University.

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Appendix A

Demographic Questionnaire

This questionnaire is made for the study of "Eating Behavior, Body Image, and Self-Esteem" The researcher would like to take 5-10 minutes of your time to answer the following questions. Your data will be kept confidentcial. Thank you so much for your cooperation.

I. Demographic Questionnaire

Gender:

( ) Male   ( ) Female

Age:

( ) 15 - 17   ( ) 18 - 20

( ) 21 – 23   ( ) 24 – 26

Ethnicity:

( ) Thai-Thai   ( ) Thai-Chinese   ( ) Thai-Indian   ( ) Indian-Indian

( ) Thai-Laos   ( ) Chinese-Chinese   ( ) Others (Specify)………………………

Body Type:

What is your height ………………………….. cm

What is your current weight……………………..kg

How many kilograms do you wish you weight (ideal weight)?

…………………kg

Have you done any cosmetic surgery? If yes, specify (e.g., Nose job, Lipo-suction, etc.)

( ) Yes ………………………………   ( ) No

How often do you eat at a fastfood within a week? (e.g. Mcdonald, Burger King)

( ) Less than once   ( ) 1 – 3 times   ( ) 4 - 6 times   ( ) everyday

Appendix B

Eating Behavior & Body Image Test (EBBIT)

II. Eating Behaviors and Body Image Test (EBBIT)

A number of statements which people have used to describe how they feel about taking tests are shown below. There are no right or wrong answers to such questions, so do not spend too much time on any one statement. Thank you for your cooperation

3 = Most of the time (Everyday)   2 = Often (Once a week)

1 = Rarely (Once a month)   0 = Never (Never)

Please mark (X) on the item that is most descriptive of yourself.

No		Never	Rarely	Often	Most of the time
1	I diet (lose weight by eating less than normal like my friends do.	0	1	2	3
2	My current weight bothers me.	0	1	2	3
3	I eat a lot of food all at once.	0	1	2	3
4	I try not to eat even when I am hungry.	0	1	2	3
5	I wish I was thinner.	0	1	2	3
6	I do not eat junk good or "fatty" food because I want to lose weight.	0	1	2	3
7	I try to lose weight by dieting.	0	1	2	3
8	I eat when I feel mad.	0	1	2	3
9	I collect food in my room and sometimes I eat it All at once.	0	1	2	3
10	I think I am fat.	0	1	2	3
11	I make myself throw up after eating.	0	1	2	3
12	I think I weigh more than most girls my age and height.	0	1	2	3
13	I eat what I want to eat, anytime I want to.	0	1	2	3
14	I eat until my stomach feels uncomfortable.	0	1	2	3
15	I worry about gaining weight.	0	1	2	3
16	I eat all my cake all at once.	0	1	2	3
17	I take diet pills to lose weight.	0	1	2	3
18	I feel really bad after I eat a lot of food.	0	1	2	3
19	I skip meals to lose weight.	0	1	2	3
20	I feel hungry when I am not eating.	0	1	2	3
21	I like my stomach to feel empty.	0	1	2	3

22	I eat junk food alone in my room, so no one sees what I am eating.	0	1	2	3
23	I take laxatives to lose weight.	0	1	2	3
24	I feel fat.	0	1	2	3
25	I feel really bad after I eat a lot of junk food, so I think about how to get rid of what I just ate.	0	1	2	3
26	I eat a lot of food sometimes when I am not even hungry.	0	1	2	3
27	I worry that if I eat, I might gain weight.	0	1	2	3
28	I look at food labels to see the calories and fat content.	0	1	2	3
29	After I eat a lot of food at one time, I try to skip the next meal or the next two meals.	0	1	2	3
30	I would eat 10 candy bars at once.	0	1	2	3
31	I sometimes sneak food.	0	1	2	3
32	I try not to eat food with a lot of fat.	0	1	2	3
33	I look at the fat on my body and wish that it was not there.	0	1	2	3
34	I eat when I feel sad.	0	1	2	3
35	I eat when I feel bored.	0	1	2	3
36	I take diuretics/diet pill to lose weight.	0	1	2	3
37	I exercise to burn off the food I eat.	0	1	2	3
38	I diet like my mother or sister does.	0	1	2	3
39	There are some foods I would eat way too much of if I had the chance.	0	1	2	3
40	I think about food a lot when I am not eating.	0	1	2	3
41	I drink diet soda, instead of eating meals or snacks.	0	1	2	3
42	I do not eat dessert (cake, ice cream, cookies) because I want to lose weight.	0	1	2	3

Appendix C

Self-Esteem Rating Scales (SERS)

III. Self-Esteem Rating Scale (SERS)

Please answer each item as carefully and accurately as you can by placing a number by each one as follows:

1 = Never   2 = Rarely   3 = A little of the time

4 = Some of the time   5 = A good part of the time

6 = Most of the time   7 = Always

Please begin

_____ 1.   I feel that people would NOT like me if they really knew me well.

_____ 2.   I feel that others do things much better than I do.

_____ 3.   I feel that I am an attractive person.

_____ 4.   I feel confident in my ability to deal with other people.

_____ 5.   I feel that I am likely to fail at things I do.

_____ 6.   I feel that people really like to talk with me.

_____ 7.   I feel that I am a very competent person.

_____ 8.   When I am with other people I feel that they are glad I am with them.

_____ 9.   I feel that I make a good impression on others.

_____ 10. I feel confident that I can begin new relationships if I want to.

_____ 11. I feel that I am ugly.

_____ 12. I feel that I am a boring person.

_____ 13. I feel very nervous when I am with strangers.

_____ 14. I feel confident in my ability to learn new things.

_____ 15. I feel good about myself.

_____ 16. I feel ashamed about myself.

_____ 17. I feel inferior to other people.

_____18. I feel that my friends find me interesting.

_____19. I feel that I have a good sense of humor.

_____20. I get angry at myself over the way I am.

_____21. I feel relaxed meeting new people.

_____22. I feel that other people are smarter than I am.

_____23. I do NOT like myself.

_____24. I feel confident in my ability to cope with difficult situations.

_____25. I feel that I am NOT very likeable.

_____26. My friends value me a lot.

_____27. I am afraid that I will appear stupid to others.

_____28. I feel that I am an OK person.

_____29. I feel that I can count on myself to manage things well.

_____30. I wish I could just disappear when I am around other people.

_____31. I feel embarrassed to let others hear my ideas.

_____32. I feel that I am a nice person.

_____33. I feel that if I could be more like other people then I would feel better

about myself.

_____34. I feel that I get pushed around more than others.

_____35. I feel that people like me.

_____36. I feel that people have good time when they are with me.

_____37. I feel confident that I can do well in whatever I do.

_____38. I trust the competence of others more than I trust my own abilities.

_____39. I feel that I mess things up.

_____40. I wish that I were someone else.