

THE RELATIONSHIP BETWEEN BODY DISSATISFACTION AND EATING DISORDER AMONG EXERCISERS

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ABSTRACT

Body dissatisfaction is an important risk factor which contributes to eating disorder. This research aimed to identify the relationship between body dissatisfaction and eating disorder among exercisers. It was hypothesized that exercisers with a higher level of body dissatisfaction tended to have eating disorder. In the present study, a total of 100 participants were recruited. The results showed a positive relationship between body dissatisfaction and eating disorder among the exercisers ($\chi^2 (100) = 6.233, p > .005$), thus the hypothesis was accepted. The limitations and implications were further discussed.

1.0 Background

The world has become increasingly more competitive, so much so, that people today compete not only in terms of amount of material assets amassed but also in terms of their psychical image. From a young age, we are exposed to dolls with beautiful faces and perfect body shapes, for example, the famous Barbie doll. Most of the girls have been obsessed with 'her' from their childhood. While playing with Barbie dolls, the idea of the 'ideal woman' was indirectly implemented into the minds of young girls; a girl who is tall with a slender body shape, small waist, fair skin, long blonde hair and big eyes was considered beautiful (Strickland, 2004). Gradually, Barbie dolls gave an impression to society of what is considered beautiful and precious. For instance, Cindy Jackson who was so influenced by Barbie dolls that she had been obsessed with the dolls since she was six years old. She claimed,

'I looked at a Barbie doll when I was 6 and said 'This is what I want to look like'. I think a lot of little 6-year-old girls or younger, even now are looking at that doll and thinking, 'I want to be her.' (Cindy Jackson, 48 years old on CBS news, 2009).

In fact, the Barbie doll's body proportion was unrealistic and not of the average shape compared to the healthy body shapes (Winterman, 2009). However, many people are still striving to achieve the unrealistic thin looks, which have contributed to life threatening disorders even at a young age. According to a study done by Dittmar, *et al.*, (2006), children who were exposed to Barbie dolls at an early age, suffered detrimental effects to their body image, even at five to seven years old. The study has suggested that the ultrathin images have made their self-esteem decrease and it also increased body dissatisfaction at the early developmental stages. Hence, it is not surprising that at the early stages of life, young girls have already set the doll as their model which leads to the issue of body image problems. Child experts from University College London's Institute of Child Health found that children from the age of six have been suffering from anorexia (Daily Mail, 2011).

Body image is not merely about physical appearances or attractiveness, instead it is a mental representation that people have created to guide their thinking on how they look; it might or might not correlate with how others perceive them (Psychology Today, n.d.). Dating back to the early 1940's it was found that people with a lean body image were perceived by others as anxious, passive and introverted. By the late 1980's, the perception had tremendously changed to a different perspective that lean body images were considered sexually appealing (Spillman & Everington, 1989). Moreover, the thin ideal has evolved over time, the desirable body shape had changed from a voluptuous body figure to today's ideal body shape of an extreme thin body shape as evidenced by the body measurements of *Playboy* magazine's models and Miss America's pageant contestants between the years 1959 to 1978 (Garner *et. al.*, 1980). However, many past researches have indicated that women have been comparing themselves to the ideal 'model-like' body shape that they desire which leads to negative consequences.

To date, body image has been treated as an important feature of boosting self-confidence and an assurance to lift up one's personal value or self-worth. For example, "For the most part, what a woman observes in the mirror is what she uses as a measure of her worth as a human being" (Lerner *et. al.*, 1973). In order to improve one's body image, people would try to be slimmer or maintain the ideal body shape as the description of a beautiful and attractive woman only applies to those who are underweight and thin (Puhl & Boland, 2001; Leung *et. al.*, 2001). In the study done by Puhl & Boland (2001), only underweight females were considered beautiful compared to those who were in the range of average weight and overweight.

Therefore, the trend to have an ideal 'model-like' body shape has correlated with eating disorders. Eating disorders are characterized by a consistent pattern of severe disturbance in eating behavior. It influences one's emotional and physical problems that will lead to life-threatening consequences; it includes anorexia, bulimia, binge eating, extreme emotions, dysfunctional behaviors and attitudes that contain food and weight issues (National Eating Disorders Association, 2005).

In the past 40 years, occurrences of eating disorders have increased from year to year; adult women with anorexia nervosa are statistically shown to have increased from 0.5 percent to 1.0 percent and 1.0 percent to 2.0 percent for adult women who have been diagnosed with bulimia nervosa (Academy for Eating Disorders, n.d.). Individuals with eating disorders may either have less desire for foods or are uncontrolled in food intake and might just need smaller amounts of food or overeating to feel satisfied (National Institute of Mental Health, 2011). Furthermore, according to Association of Anorexia Nervosa and Associated Disorders approximately 24 million people of all ages have eating disorder in United State, among 200 people, 1 person will have suffered with an eating disorder. In addition, eating disorders have been recorded as having the highest mortality rate of any mental illness, which is 4% for anorexia nervosa, 3.9% for bulimia nervosa and 5.2% for eating disorders not otherwise specified.

Besides that, there are no gender differences in being self-conscious about the way a person look. Even though body dissatisfaction is more common among females than males, it is important to comprehend that both genders are concerned about their body image.

Generally, females would desire the 'ideal' thin body shape and the males would desire to have a masculine look. According to Furnham *et. al* (2002), most women show high dissatisfaction with their bodies by desiring to be thinner and men show body dissatisfaction by hoping to be heavier or thinner, equally. According to Prevos (2005), studies have shown that women and men feel dissatisfaction regarding their current body shape. According to DMH in US (2006), about 10 to 15 percent of individuals who are diagnosed with bulimia and anorexia were male. Hence, this shows that the issue of body dissatisfaction is not merely limited to one gender.

Furthermore, many efforts such as dieting and excessive exercise have been undertaken by individuals in order to achieve the 'ideal' body shape. According to Cohen *et. al* (2009), a total of 43% of respondents were dissatisfied with their current body weight. One-fifth of all respondents had undergone counseling by physicians to lose weight, and more than half (54%) of all respondents had tried to lose weight in the study. For those who tried to lose weight in the study, about 79% dieted, 53% exercised, 37% used any form of American or Brazilian diet pills, 2% vomited and 4% had weight-reduction surgery such as gastric bypass or liposuction (Cohen *et. al.*, 2009) to help in weight reduction. In addition, according to Association of Anorexia Nervosa and Associated Disorders, more than half the teenage girls and nearly one-third of teenage boys employed several unhealthy weight control manners such as fasting, smoking cigarettes, taking laxatives, vomiting and skipping meals to avoid weight gain.

Often people have made judgments about their weight with unhealthy patterns and have feelings of dislike towards their body image. Low self-confidence and negative thoughts have indirectly encouraged women to mistreat themselves in an unhealthy way. The unrealistically, underweight body shape has becoming a long-term assignment to achieve even for those who are in the normal-weight category. Females aspire to be as skinny as possible or to be almost anorexic in size in search of the 'perfect body' to represent one's worthiness and social status in society; the same goes for males who are over-concerned about their body image. Hence, the thin-culture has become a serious issue that might negatively influence a person's life.

1.1 Problem Statement

People are generally dissatisfied with their bodies, especially for those who are in the normal weight and overweight group. The prevalence of body image has been an over-concern among young adults often linked into psychological and physical illnesses that makes the present examination valid in the present study. Today, body dissatisfaction has become a significant issue discussed among the public. Many of them have spent enormous amounts of time and energy to enhance or maintain their body shape to be the desirable and acceptable in the eyes others and to themselves. However, the trend of a thin-culture has diminished the healthy level of body weight, hence; it creates problems such as eating disorders among young adults. Currently, it is unclear whether people who exercise may be at a particularly high risk of developing an eating disorder. Hence, this study aims to examine whether exercisers feel more body dissatisfaction as a result that leads to a higher chance of having an eating disorder tendency.

1.2 Significance of the Study

Previously, past research on body dissatisfaction have been conducted mostly among females students in college settings. In the present study, participants included both genders, female and male. It is because body dissatisfaction occurs not only among the females but among males as well. Furthermore, this study is also significant in examining the relationship between body dissatisfaction and eating disorders among exercisers. Previous studies that were related to body dissatisfaction have less relation with exercisers; hence it is significant to include exercisers as the subject of the present study in association with body satisfaction and eating disorders.

1.3 Research Objectives and Research Questions

1.3.1 Research Objectives (RO)

RO 1 – To examine level of body dissatisfaction among exercisers.

RO 2 – To investigate degree of dissatisfaction with specify areas of their body among exercisers.

RO 3 – To investigate the discrepancy between current and ideal body shape preferred for both genders.

RO 4 – To examine the association between body dissatisfaction and eating disorders among exercisers.

1.3.2 Research Questions (RQ)

RQ 1 – What is the level of body dissatisfaction scores among the exercisers?

RQ 2 – What is the level of dissatisfaction with certain areas of their body among exerciser?

RQ 3 – What are the differences between current and ideal body shape that are preferred for both genders?

RQ 4 – Is there any relationship between body dissatisfaction and eating disorders among exercisers?

1.4 Conceptual and Operational Definition

Precisely, level of satisfaction was examined and correlated with the tendency of eating disorder among target participants. The definition of body dissatisfaction is the feeling of disappointment or frustration towards one's body image (Stice & Shaw, 2002). In the present study was only focused among young adult exercisers as they are more active to participate in various types of exercisers. Next, eating disorder is defined as an illness that causes serious disturbances on eating behavior (DSM-IV-TR, American Psychiatric Association, 2000). In addition, the present study only will investigate tendency of having eating disorder among the exercisers, regardless of gender differences.

Operationally, body dissatisfaction would be measure through the responses that respondent gave in Body Shape Questionnaire (BSQ). The Body Shape Questionnaire is “a self-report measure of concerns about body shape, in particular the phenomenal experience of ‘feeling fat’” (Cooper *et. al.*, 1987). Body Area Satisfaction Subscale (BASS) consists of 9 specify body area was used to determine the levels of body satisfaction with specify body areas (Falconer & Neville, 2000). Moreover, the Figure Rating Scale (Stunkard *et. al.*, 1983) consists of nine female figures; vary from very thin to very obese. Furthermore, Eating Attitudes Test (EAT-26) would used in examine eating disorder among the

respondent, it is a self-applied test that measure one's attitudes, feelings and preoccupations that associates to food, weight and exercise (Garner *et. al.*, 1982). Lastly, participants would recruit through purposive sampling in selected location. A total of 100 participants would be recruited and was restricted to only those who have been exercise more than two hours per week, regardless of gender and race differences.

1.5 Theoretical Framework

The self-discrepancy theory of uses arose originally in 1987 and was developed by Tony Higgins. The theory is an attempt to identify different types of selves in relation to divergent beliefs that produced emotional vulnerabilities among people (Higgins. 1987).

There are three types of selves introduced in the theory. Firstly, the two 'actual' self – in which people perceive who they really are and also believe how the others actually think of them. Second is the 'ideal' self, which is when an individual would like themselves to possess certain qualities. Third, is the 'ought' self, in which indicates people believe they should own the required characteristics.

According to Higgins (1987), the standpoint of the self is defined as 'a point of view from which you can be judged that reflects a set of attitudes or values', and the standpoint is divided into two outlines; firstly, an individual's own personal standpoint; and secondly, the standpoint of significant others such as a father, mother, or spouse. However, the self-discrepancy theory has some discrete aspects. When different types of discrepancies were involved within individuals, different degrees of emotion vulnerability can be produced.

The theory is applicable in the present study because self-discrepancy does not merely affect one's emotions but it also influences their perceptions of their own body shape. Furthermore, the level of satisfaction with their body shape differed with the discrepancy between the 'ideal' self and 'actual' self. If these two selves do not correspond, an individual would perceive their body image negatively due to the incongruent self-representations, and be more vulnerable to a body image disturbance; and vice-versa.

Hence, it is assumed that body dissatisfaction is associated with the tendency of developing an eating disorder, where the three types of selves proposed in the self-discrepancy theory could influence one's vulnerable emotions that may affect one's eating behavior.

1.6 Literature Review

In recent years, topics related to body image have become the 'hot' issue discussed among people, particularly among female adolescences and young adults. Body image is defined as a "loose mental representation of body shape, size, and for which is influenced by a variety of historical, cultural, and social, individual, and biological factors, that operate over varying time spans" (Slade, 1994). Besides that, body image is also described as how people perceive their bodies and this is reflected through the level of satisfaction they have with their physical bodies (Reboussin *et. al.*, 2000).

In the past, people only believed in 'inner beauty', such as personality, intelligence, thoughts and value system, as the most essential element for a person to be classified as beautiful and precious. However, the trend had changed where the importance of inner

beauty has been taken over by a person's body figure or physical appearances. According to a study done by Leung *et. al.*, (2001), there is a downward trend of BMI among the Miss Hong Kong Beauty Pageant contestants from 1975 to 2000. Results suggests that Chinese people in Hong Kong prefer a relatively tall and slim body figure, those with this type of body figure are considered to be beautiful women. This study has shown consistency from past research done by Garner *et. al.*, (1980) that the desirable body shape had changed from the voluptuous body figure to today's ideal body shape that is extremely thin by using the bust and hip measurements of *Playboy* magazine models and Miss America Beauty Pageant contestants between the years 1959 to 1978. Certainly, one's body image has played an important role in today's world; a positive body image would help a person to gain self-confidence, self-worthiness and even make a good impression to others in society (Robert-McComb *et. al.*, 2007). Consequently, the newly concept of having an 'ideal' body shape has spread all over and has been triggering people's emotions and self-esteem. The high level of body dissatisfaction among people can be easily found in people who are overweight and obese. However, many of those who are in the normal weight group are struggling to be as thinner as well. According to Duke Medicine (2010), approximately 50 to 60 percent American girls who were in the normal weight group have a false perception that they were overweight; nevertheless, only 15 to 20 percent of them were actually overweight.

Body dissatisfaction is defined as negative judgments of one's physical body, such as their figure, weight, stomach, and hips (Stice & Shaw, 2002). Today, people commonly believe that they are 'fat', regardless gender, age or socioeconomic status. People who are over concerned over their body shape come from all walks of life; children as young as six have been found to be hospitalized due to their overly concern for their body image. Even pregnant women do not loss interest in keeping their self 'fit' and nice (Robert-McComb *et. al.*, 2007; Kendall *et. al.*, 2001). According to a study done by Grabe and Hyde (2006), Asian American, Hispanic, and White women experienced almost the same levels of body dissatisfaction. In fact, results show that White women experience slightly higher levels body dissatisfaction than Black women in U.S (Grabe & Hyde, (2006); Overstreet *et. al.*, (2010).

However, females are not the only ones suffering from eating disorders; it is prevalent among males as well, even though females appeared to be more dissatisfied with their bodies than males (Ogden, 2010). A study from Australia by the Better Health Channel (2011), indicated that approximately one out of four Australian men who were in the normal weight range considered themselves to be fat, and about 45 percent of men were depressed because of their current body shape compared to 25 years ago. Gay men, models and athletes were found to be more vulnerable to poor body image as they were more likely to be judged by others, leading them to feel insecure about their body image (Better Health Channel, 2011). According to a study done by Watkins *et. al.*, (2008), overweight and obese men have a significantly high degree of body dissatisfaction compared to the men who are in the normal and underweight group. Specifically, obese men have shown lower levels of body satisfaction compared to overweight people. Hence, it is justified that both genders might be at the risk of developing an eating disorder caused by body dissatisfaction due to psychological disturbances.

According to American Psychiatric Association (2000), body dissatisfaction has been categorized as one of the main diagnostic features under eating disorders. Past studies have demonstrated that body dissatisfaction of an individual, in both genders, is correlated with eating disorders. Feelings of dissatisfaction with their body image has lead them to engage in unhealthy weight regulating behaviors, such as vomiting after eating, fasting or skipping meals in an attempt to control their weight to adapt to current, popular thin-culture society (Tylka, 2004).

The idea of an ‘ideal’ body shape has not merely occurred in certain countries, but is widely spread around the world. With a society that emphasizes the ‘ideal’ body shape the results have been that there are many people suffering from issues with their body image (Turner *et. al.*, 1997). An astounding result was revealed from a surveyed done by PsychologyToday magazine that indicated that 15 percent of women and 11 percent of men are willing to sacrifice more than five years of their lives, and 24 percent of women and 17 percent of men would rather sacrifice more than three years of their lives as a trade-off to have the ideal body image. Hence, this phenomenon describes how important it is to have an ideal body shape in a society that values life only when their body image is more satisfying to them (Garner, 1997).

In Western societies, a lean body shape has been associated with positive characteristics such as pleasure, success, youthfulness and social acceptability. In contrast, over-sized body shapes have been described with negative traits such as laziness, lack of discipline and being vulnerable (Grogan, 2008). According to national survey data from China, in the year 2000, the ideal of slenderness for women’s body image had become apparent in China, as well as other Asian countries (Luo *et al.*, 2005).

1.7 Body Dissatisfaction with Specify Areas

According to US-based survey in the ‘Psychology Today’ magazine, 56 percent of women were dissatisfied with their overall appearance, 71 percent were dissatisfied with their abdomen, 66 percent with their body weight, 60 percent with their hips and 58 percent with their muscle tone (Garner, 1997). The majority of women showed dissatisfaction, particularly with their stomach, hips and tights, and bottom. They showed more dissatisfaction with their bodies than men. In addition, a study done by Stiman *et. al.*, (2009) indicated the female participants had been given opinions that it was desirable to have smaller stomachs, thighs and legs, and a bigger breast size.

However, men felt dissatisfied towards their bodies as well. The survey reported that 63 percent of men showed dissatisfaction towards their abdomen area, 52 percent with their weight, 45 percent of them with their muscle tone, 43 percent with their overall appearance and 38 percent with their chest (Garner, 1997). According to a study done by Leit *et. al.*, (2001), the ideal male body has become increasingly muscular over the years. Furthermore, another study done by Furnham and Greaves in year 1994 (as cited in Grogan, 2008), a total of 47 British men aged between 18 to 35 participated to rate the level of satisfaction they felt for a series of body parts; results indicated that men were least satisfied with biceps, width of shoulders and chest (Grogan, 2008). Additionally, Ogden (2010) reported that men preferred to enhance their arms, chest and shoulders and to reduce fat from their

stomach and overall body. In general, men do feel dissatisfied with their bodies, mainly with their arms, chest, shoulders and stomach.

1.8 Eating Disorder

Many past studies have indicated that body dissatisfaction leads to eating disorders (Stice & Bearman, 2001; Klemchuk *et. al.*, 1990; Keski-Rahkonen *et. al.*, 2005). According to the American Psychiatric Association (2000), eating disorders are defined as severe disturbances in the eating behaviors of an individual that affects one's emotions and beliefs. People who suffer with eating disorders are generally over concerned with their body image that could a person's life to be at risk. According to Health and Human Services (2011), eating disorders that involve physical and psychological elements would negatively affect an individual's growth and development. Furthermore, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, American Psychiatric Association, 2000), eating disorders includes two important diagnosis, which are anorexia nervosa and bulimia nervosa. Anorexia nervosa is defined as an individual with the fear of weight gaining and who refuses to maintain a normal weight. Meanwhile, bulimia nervosa is defined as constant binge eating and purging patterns that lead to compensatory behavior, such as vomiting, fasting, engage in excessive exercise and laxative use (American Psychiatric Association, 2000; Milligan & Pritchard, 2006).

Many people have been suffering from depression and feelings of having an imperfect and unattractive body shape; they often 'feel fat' and always perceive themselves as 'obese' even though they are in the normal weight range. According to Association for Anorexia and Bulimia, eating disorders are recorded as the third most chronic problem faced by the people, particularly in adolescent females. In America, there are more than 10 million Americans females and one million males suffering from life-threatening eating disorders, such as anorexia and bulimia (Crowther *et. al.*, 1992; National Eating Disorders Association, 2005). According to Central Region Eating Disorder Services; CREDS (2007), in the United States, Canada and Australia, every in 100 adolescent females, there would be one with anorexia nervosa, and about two to five with bulimia nervosa. There are about two million people involved in binge eating behavior that is closely attached with resulting obesity (Duke Medicine, 2010). Furthermore, a study done by Pallan *et. al.*, (2011), reported that children as young as 5 develop a self-awareness of their body image and a level of dissatisfaction with their bodies that climb to a high of 80% of South Asian children in the U.K. In addition, a study in Korea done by Jung *et. al.*, (2009), showed that Korean youngsters have greater body dissatisfaction than U.S participants, regardless of gender differences. Besides that, Better Health Channel from Australia in 2011 also indicated that 17 percent of men were on weight loss programs controlled by the ideal lean muscularity look that is popular. Frequently, excessive exercise and illegal muscle enhancing drugs such as steroids is popularly consumed among men. About 3 percent of the Australian teenage boys consumed Steroids in order to achieve the 'ideal' body shape that is lean and muscular. In addition, males with eating disorders have now tremendously increased from year to year. An Australia study by the Better Health Channel (2011) indicated that anorexic males were found in one of 10 people. Four percent of men suffered with bulimia and about three percent of men suffered with binge eating. Hence, a lean body image is widely pursued among people, regardless of gender differences, and has caused people to suffer with eating disorders. However, it is believed that men with eating

disorders will consistently increase from time to time, especially among male exercisers, as they are less likely to seek professional advice and continue to keep themselves fit though excessive exercise.

1.9 Exerciser Correlated with Body Dissatisfaction and Eating Disorder

Previously, people exercised mainly to promote health benefits (Ogden, 2010). However, the intentions involved in exercising have been altered to fit different purposes that vary among people. It is not surprising that exercisers often say that their motive for exercising is to reduce body fat in order to achieve the 'ideal' body shape rather than the initial motive to maintain good health. According to Smeets, *et. al.*, (2011), a latest study reported that training participants who have self-defined unattractive body parts enhanced feelings of dissatisfaction with their bodies. According to Oliveira *et. al.*, (2003), results showed no significance of eating disorders among athletes; however, the study claimed that there is a worrying trend of mild body image distortion occurring among athletes associated with excessive physical exercise, which was identified as partial eating disorder syndrome.

A study by Tiggemann and Williamson (2000), showed a positive relationship between exercise and well-being in a sample size of people aged between 16 to 60 years old for both genders. However, a negative relationship was found for a particular aged group; those between 16 to 21 years old seem to have decreased body satisfaction and self-esteem as the amount of time they exercised increased. Also, the study indicated that women exercised more for weight control and muscle toning as compared to their male counterparts, they often exercised due to body dissatisfaction and this pattern would predictably continue in the future (Tiggemann & Williamson, 2000). Moreover, a study done by Krane *et. al* (2001), showed that exercisers gave themselves too much pressure to maintain minimal fat in their bodies. They engaged in excessive exercise if they ate too much food in a particular day. Hence, the exercisers in the study have a desire to pursue an unrealistic body shape.

To date, little research has been done with exercisers associated to the level of body dissatisfaction felt and eating disorders. Hence, the present study is to examine whether high levels of eating disorder caused by body dissatisfaction among those who exercise at least two hours per week.

2.0 Methodology

2.1 Study Design

This study employed the quantitative research method to obtain data regarding respondents' perception of their bodies and also eating disorder tendency.

2.2 Instrumentation

A survey of three sets of questionnaires was admitted in this study. The questionnaires were divided into four sections; demographics, body shape questionnaire, body area satisfaction subscale, figure rating scale and eating disorder.

Section one is the demographics, participants were required to fill in personal details such as, age, gender, weight, height and hours of exercise per week. In section two, Body Shape Questionnaire (Cooper *et. al.*, 1987) was employed to measure the concerning level of

one's body shape. The Body Shape Questionnaire consisted of 34 items and used six-point Likert scale ("never," "rarely," "sometimes," "often," "usually," "always"). Scores summed from 1 through 6 and total scores ranged from 34 to 204. Generally, a total scores on the BSQ of less than 80 was considered as normal, a range between 80 to 110 would be mild level of body concern, scores between 111 to 140 were categorized moderate and those whose scores exceeded 140 were considered to have significant over-concern of their body image that led to body image distortion. BSQ test showed a good internal consistency with Cronbach's alpha of 0.97(Cooper et. al., 1987)

Besides that, Body Area Satisfaction Subscale (BASS) (Falconer & Neville, 2000) was used to determine the levels of body satisfaction with specify body areas. BASS consisted of nine items, which could rate from 1 to 5 (1 being very satisfied and 5 being very dissatisfied). It means that scores closer to 4 and 5 indicated high levels of body area dissatisfaction. Furthermore, the BASS test has been found to have good internal consistency (Cronbach's alpha 0.80) (Falconer & Neville, 2000).

Next, the Figure Rating Scale (Stunkard *et. al.*, 1983) was originally developed to measure of body image disturbance. The scale consists of nine female and male silhouettes, which vary from very thin to very obese. Participants were asked to select silhouettes that most closely resemble their current and ideal body shape. A positive and negative discrepancy score was determined by subtracting the scores of ideal and current body shape. A higher discrepancy score indicates greater desire to have a slimmer body. Figure Rating Scale has been found to have adequate test-retest reliability and validity (Thompson, 1991).

Lastly, the Eating Attitudes Test-26 (EAT-26) used in examine eating disorder among the respondent, is a 26-item self-applied test with 4 point Likert scale that measure one's attitudes, feelings and preoccupations associated with food, weight and exercise (Garner *et. al.*, 1982). Answers range from 3: always, 2: usually, 1: often, 0: sometimes, 0: rarely to 0: never. Besides that, there are three separate subscales in this test: 1) 'Dieting', 2) 'Bulimia and Food Preoccupation' and 3) 'Oral control' (Garner *et. al.*, 1982). A total of 26 items were summed up ranges from minimum 0 to maximum scores of 78. The respondents, who scored a total score of 20 or higher in EAT-26 would be considered to have a tendency of eating behavior and might suffer from anorexia and bulimia nervosa according to DSM-IV-R. EAT-26 does not provide a specific diagnosis of Eating Disorder; however it is regarded as a resourceful discovery for Eating Disorder. The EAT-26 has been tested to a high degree with a correlation coefficient of .98 (Garner *et. al.*, 1982). The EAT-26 has also established adequate internal consistency (Cronbach's alpha =0.90) (Garner *et. al.*, 1982).

2.3 Inclusion and Exclusion Criteria

1) Inclusion criteria:

- a) Malaysians aged between 20 to 40 were included regardless of gender, race, religion and course.
- b) People who exercise more than 2 hours a week.

2) Exclusion criteria:

- a) International people were excluded in this study to avoid different culture beliefs.

- b) People who cannot understand English
- c) People who have cognitive impairment, physical impairment and psychosis problems.

2.4 Sample Size

A total of 100 young adult participants (54 females and 46 males) were recruited through purposive sampling technique. The present study approached the participants on weekdays and all of whom were volunteers. Besides that, this technique is estimated to identify the respondents with particular characteristics such as age and hours of exercise. The age range of participants ranged from 20 to 40 years old, as people in this age range were most actively participate in physical activities. The mean BMI (weight in kilograms divided by height in square meters) for the sample was 21.41(SD = 2.40).

A consent form and letter to participants were handed to the participants. Participants were allowed to keep the letter to participants for future references and the consent forms were collected by the researcher after being signed off by the participants. Later, participants were given about 15 minutes to complete the questionnaire.

2.5 Analysis

All three sections in the questionnaire (demographics, body dissatisfaction and eating disorder) were analyzed and tabulated. The Statistical Package for the Social Sciences (SPSS) software was employed to generate and analyze the collected data.

The results for demographics were exhibited through tables that show the percentages of each data (eg, weight, height and hours of exercised). Levels of body dissatisfaction and eating disorder were tabulated using frequency and percentage figures. Meanwhile, chi-square test was used to determine the relationship between body dissatisfaction and eating disorder.

3.0 Results

Preliminary analyses used SPSS to examine the relationship between body dissatisfaction and eating disorder among exercisers. This section discusses the results of data collected from 100 participants who actively exercised above two hours per week. The results and discussion were divided into three essential sections: demographic information, result for each questionnaire of body dissatisfaction and eating disorder and lastly, the relationship between body dissatisfaction and eating disorder.

3.1 Demographic Information

Sample Size

A total of 100 participants were recruited from two different locations, SEGi University College, Kota Damansara and True Fitness, Subang Jaya. The majority of the participants were females, which consisted of 54% of the total 100 participants. Meanwhile, the male participants comprised 46% in the present study. Ages ranged from 20 to 40 years old and participants actively exercised for two hours and above per week were recruited. The mean age for the participants was 25.37 years ($SD=5.35$). Majority of the participants were in the age group of 21, which consisted of 19% of the total 100 participants. Age group of 23

comprised 18%. Lastly, the lowest among all aged group who participated in the research were between 30 and 37 or only 1% of the total 100 participants. Chinese participants were the majority in the present study; they consisted of 60% of the total number Indians 17% while 14% were Malays. Other ethnicities were 9%.

Table 3.1: Exercisers Information

| | Mean | Std. Deviation |
|-------------------|--------|----------------|
| Body weight | 59.61 | 9.25 |
| Body Height | 167.07 | 9.51 |
| BMI | 21.41 | 2.40 |
| Hours of exercise | 3.19 | 1.96 |

Table 3.1 above shows the mean scores for body weight and body height among exercisers in the present study. Mean score among 100 participants for body weight was 59.61 kg and body height was 167.07 cm. The average hours exercised among the 100 exercisers was 3.1 hours per week. Besides that, the Body Mass Index (BMI) helps to determine weight issues based on an individual's height and weight. To determine BMI, weight in kilograms is divided by height in meters, squared. In the present study, the average BMI among the 100 participants was 21.41, which was in the range of healthy weight.

Body Dissatisfaction

Table 3.2: Body Shape Questionnaire (BSQ)

| BSQ | N | Percentage (%) | Mean |
|-----------------------------|-----|----------------|-------------------|
| < 80 (normal standard) | 7 | 7 % | |
| 80- 110 (mild concern) | 11 | 11% | |
| 111- 140 (moderate concern) | 27 | 27% | |
| > 140 (marked concern) | 55 | 55% | |
| Total | 100 | 100% | 138.97 (SD=33.69) |

Table 3.2 presents descriptive statistics for the Body Shape Questionnaire. The mean score for BSQ was 138.97 ($SD= 33.69$). Participants were categorized into four categories of concern (normal, mild, moderate and marked) with body image distortion. Result showed only 7% participants had normal concern of body image, 11% participants had mild concern. 27% had moderate concern and 55% recorded marked concern. The result showed a worrying phenomenon that more than half of the participants among young adult exercisers experienced body image distortion.

Table 3.3: Body Area Satisfaction Subscale (BASS)

| Body relation subscale | Mean | Std. Deviation |
|------------------------|------|----------------|
| Face | 2.81 | 1.03 |
| Hair | 2.83 | 1.06 |
| Lower torso | 3.05 | 1.08 |
| Mid Torso | 3.32 | 1.09 |
| Upper Torso | 3.08 | 1.05 |
| Muscle Tone | 3.12 | 1.02 |
| Weight | 3.07 | 1.03 |

| | | |
|--------------------|------|------|
| Height | 3.10 | 1.23 |
| Overall appearance | 2.77 | .76 |

Table 3.3 shows a total of 9-items in body relation subscale from multidimensional body-self relations questionnaire that were examined. Mean scores for each body areas were varied; the most dissatisfied area was mid torso (waist, stomach), which scored 3.32 (SD=1.09), followed by the muscle tone area which scored 3.12 (SD= 1.02). Participants were most satisfied with their overall appearance which scored 2.77 (SD=.76).

Table 3.4: Figure Rating Scale

| | Male (N= 46) | | Female (N=54) | |
|--------------------|-----------------|------|------------------|------|
| | M | SD | M | SD |
| Current body shape | 4.22 | 1.07 | 3.69 | 1.26 |
| Ideal body shape | 3.80 | .95 | 2.66 | .69 |

Note: $t_a(80) = 6.8, p < .05$, $t_b(98) = 2.25, p > .05$

t_a = ideal body shape

t_b = current body shape

Referring table 3.4 above, from the mean scores result, male and female exerciser were distinguished because the ideal body figure's perception was different. The mean score for current body shape for male exercisers was 4.22 (SD= 1.07) and female exercisers 3.69 (SD= 1.26) respectively, meanwhile the scores for an ideal figure rating was towards a slender figure for both genders; mean score for male exercisers was 3.8 (SD= .95) and for female exercisers 2.66 (SD= .69). Hence, both genders showed a negative discrepancy that the participants would prefer to owned a body figure that is more slender than their current body figure.

Table 3.5 Independent Samples Test

| | | Levene's Test for equality of variance | | T-test for equality of means | | | |
|-----------------------|-------------------------------|---|---------|------------------------------|--------|--------------------|---------------------|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Differences |
| Current body shape | Equal variance assumed | 2.003 | .160 | 2.252 | 98 | .027 | .5322 |
| | Equal variance not assumed | 2.281 | .98.000 | .025 | .5322 | | |
| Ideal body shape | Equal variance assumed | 5.785 | .018 | 6.984 | 98 | .000 | 1.1469 |
| | Equal variance not assumed | 6.808 | 80.275 | .000 | 1.1469 | | |

| | | T-test for equality of means | | |
|-----------------------|-------------------------------|------------------------------|---|--------|
| | | Std.Error Difference | 95% confidence interval of the differences | |
| | | | Lower | Upper |
| Current body shape | Equal variance assumed | .2363 | .0632 | 1.0012 |
| | Equal variance not assumed | .2333 | .0692 | .9952 |
| Ideal body shape | Equal variance assumed | .1642 | .8210 | 1.4728 |
| | Equal variance not assumed | .1685 | .8117 | 1.4822 |

An independent samples t-test was conducted to determine whether any difference was evident between scores for current body shape and ideal body shape. According to Levene's Test, equal variances are assumed for current body shape but not assumed for ideal body figure. The result showed significant for the ideal body shape, $t(80) = 6.8$, $p < .05$ but was not significant for the current body shape between the male and the female, $t(98) = 2.25$, $p > .05$.

Eating Disorder

Table 3.6: Subscale from EAT-26

| EAT-26 subscales | Mean | Std. Deviation |
|--------------------------------|------|----------------|
| Dieting | 6.81 | 5.88 |
| Oral Control | 2.57 | 2.69 |
| Bulimia and Food Preoccupation | 2.51 | 2.65 |
| Total | 1.38 | .49 |

Table 3.6 shows a descriptive statistic for EAT-26 test. The total mean score for EAT-25 was 1.38 ($SD = .49$). The EAT-26 questionnaire consists of three subscale, which are dieting, oral control and bulimia and food preoccupation. Mean scores were analyzed according to the three subscales; dieting ($M = 6.81$, $SD = 5.88$), oral control ($M = 2.57$, $SD = 2.69$) and bulimia and food preoccupation ($M = 2.51$, $SD = 2.65$). Results showed that dieting subscale scored the highest and oral control slightly came after bulimia and food preoccupation subscale.

Table 3.7: Eating Attitude Test- 26 (EAT-26)

| | N | Percentage (%) |
|-----------------------------|----|----------------|
| Normal | 62 | 62% |
| Tendency of eating disorder | 38 | 38% |

According to Garner *et. al.*, (1982), EAT-26 test is a useful instrument to assist people to have an early presumption for eating disorder. Therefore, individuals who score 20 or above are advised to seek qualified professional for diagnosis in eating disorder. The

present study has classified participants into two groups; individuals who scores less than 20 and individuals who score 20 and above. Result has indicated a total of 66 participants were scored less than 20 and only 38 participants scored 20 and above in the EAT-26 test.

Relationship between Body Dissatisfaction and Eating Disorder

Table 3.8: Cross Tabulation

| EAT-26 | | | Normal | Tendency of ED | Total |
|--------|----------|---|--------|----------------|-------|
| BSQ | < 80 | N | 3 | 4 | 7 |
| | | % | 4.8% | 10.5% | 7.0% |
| | 80-110 | N | 6 | 5 | 11 |
| | | % | 9.47% | 13.2% | 11.0% |
| | 111- 140 | N | 13 | 14 | 27 |
| | | % | 21.0% | 36.8% | 27.0% |
| | >140 | N | 40 | 15 | 55 |
| | | % | 64.5% | 39.5% | 55.0% |
| Total | | N | 62 | 38 | 100 |
| | | % | 100% | 100% | 100% |

Note: $\chi^2 (100) = 6.233, p > .005$

The present study hypothesized that the more participant feel body dissatisfaction, the higher tendency for them towards eating disorder. A cross tabulation analysis was conducted to determine whether body dissatisfaction associate with eating disorder through BSQ and EAT-26 test. Result indicated even those who have standard body image towards themselves also has contributed to the tendency of eating disorder (10.5%). Then, category of mild concern of body dissatisfaction range between 80 to 110 scores show a total of 5 (13.5%) participants engaged in eating disorder behavior. Next, a total of 14 (36.8%) participants shows moderate body dissatisfaction and have tendency on eating disorder. Lastly, majority of participants (54.5%) scores more than 140 scores in BSQ, while only 15 (39.5%) of them have tendency on eating disorder. However, an increase phenomenon can be seen in association between BSQ and EAT-26; the more an individual feels body dissatisfaction, the higher tendency of an individual to have eating disorder.

Chi-square was used to test the relationship in the study. Result indicated that there was a positive relationship between body dissatisfaction and eating disorder. However, there is no significant relationship between the two variables, $\chi^2 (100) = 6.233, p > .05$. Therefore, the result of the present study might happened by chances and hypothesis was not significant even though a positive relationship was revealed.

4.0 Discussion

Nowadays, a ‘model-thin’ body shape has become an important requirement for the majority people in this competitive world in order to gain confidence and make an impression (Grogan, 2008). No one would prefer a voluptuous body shape as this kind of

body shape is no longer considered beautiful; instead a slender body shape is well-accepted and is attractive in the eyes of society. Often, people tend to accept the new way of saying that ‘the slimmer you are, the prettier you will be’ in their daily life without objection or doubt. Even though they know it might jeopardize their health in the future, they still strive for a smaller body to be more attractive and to be socially accepted.

This research explored the relationship between body dissatisfaction and eating disorders with those who have consistently exercised at least two hours per week. The primary data was collected by request from 100 participants who answered a set of questions regarding body satisfaction and eating attitudes. The participants were recruited through purposive sampling, whereby the researcher needed to verify whether the participant had been exercising for two hours a week in the past four months. The present study was to investigate whether the more dissatisfied and individual feels with his/her body, the higher the tendency for an individual to develop an eating disorder.

From this present study, there were a few conclusions made. The findings of the study have responded with the first research question; a majority of the participants were categorized in the most concerned category, where participants were considered to have body image distortion in the present study. The high scores found in the Body Shape Questionnaire, has indicated that exercisers were mainly dissatisfied with their body shape. It is probably because the main purpose for exercising was not merely to gain a healthy lifestyle, but to lose weight and keep the body fit and slim. The present study has shown inconsistencies with a previous study done by Furnham, *et. al.*, (1994) which found that women exercisers had a more positive self-image compared to non-exercisers. The present study has shown that a majority of the exercisers probably had some level of body image distortion. The divergence between these two studies could be mainly because of different cultural backgrounds, as Asians favor a smaller size and thinner body figure compared to Westerners. Besides that, it might also be due to different periods in which the studies were conducted, where Furnham and colleagues conducted their study in the year 1994 and the present study was newly conducted. Hence, the idea of a slim body figure may have differed between the 17 years.

Furthermore, the present findings have indicated that there is consistency with the past survey done by ‘Psychology Today’ magazine that the mid torso is the area of most dissatisfaction for both genders. However, the results from the past survey and present study shows an inconsistency for the second highest dissatisfied area. Muscle tone was recorded as the second area that people were most dissatisfied with in the present study, while weight was reported as second highest area of dissatisfaction in the past survey. The differences of results might be due to the difference in participants, where the present study was only examined exercisers. Besides that, according to Bordo, 2003 (as cited in theSite.org, 2009), says that today in the 21st century, both men and women wish to have a toned body figure. Hence, the beauty ideal remains being slim but require having a firm look as well. Therefore, the dissatisfaction area for muscle tone would come before weight in the present study compared to many previous studies.

A t-test was conducted for the figure rating scale; the present findings indicate that the current body shape was not significant differed between gender $t_b(98) = 2.25, p > .05$,

while the ideal body shape differed statistically significant between genders, $t_{\alpha}(80) = 6.8$, $p < .05$. Apparently, the results show that males and females have different ideal body shapes. Females tend to prefer figure two in terms of body shape, while males prefer to have figure 3 as their body shape. Hence, the present study has indicated that both genders desired to have a smaller body figure compare to their current body figure. The results were consistent with previous research done by Prevos (2005), which concluded that only 38% of men and 66% of women considered their current body figure to be much larger than their ideal body figure. Even though the percentage was not equal, the results of the study still agreed that men also feel dissatisfaction with their body shape.

Besides that, body dissatisfaction was frequently associated with the tendency of developing an eating disorder. Excessive food control or dieting is the most popular method used by people to reduce weight. According to Grogan (2008), the term diet may be different according to different contexts. However, it is mostly interpreted as a reduction of food or calorie intake mainly for weight loss. In recent years, many dieters have not only reduced the amount of food intake, but have resorted to more extreme methods of reducing body fat, such as consuming laxatives and smoking, as a more effective way to reduce body weight. Therefore, it shows that dieting has become one of the most popular methods for weight control. In the present study, subscales of dieting (table 4.6) were the highest occurrences compared to other subscales. It is mainly because most of the participants found that regulating or prescribing food and drink for the ideal body shape is always an important element in transforming the self to fit the ideal body shape. People who diet may gain enormous praise and compliments from their partner, friends and family when they start losing body weight. Eventually, these kinds of compliments make them feel happy. Gradually, an extreme dieter will continue their habits in order to get 'better' or 'prettier' in the future. A study done by Krane *et. al.*, (2001), has indicated that exercisers go on extreme diets with excessive exercise in order to obtain the unrealistically thin body shape. The study concluded that even the exercisers knew that they were being unrealistic and that being that skinny was a risk for them, but they still felt body dissatisfaction and compared themselves to the unrealistic so-called ideal body shapes.

Furthermore, the present study showed consistency with past research done by Alipoor *et. al.*, (2009), where a positive relationship was found between BSQ and EAT-26 among exercisers. Therefore, it has enhanced our findings where the more an individual feels body dissatisfaction, the higher the tendency of an individual to developing an eating disorder. Besides that, the findings of the relationship between body dissatisfaction and eating disorders bring benefits and negatives responses to the public. Although body dissatisfaction can lead to a tendency of developing an eating disorder, a few scholars have found that body dissatisfaction does not lead to developing an eating disorder. Instead, body dissatisfaction of an individual benefits people by lowering the risk of health problems, because they believe that when an individual is aware of their dissatisfaction of the body, they exercise to reduce fat and that has directly helped improve one's health. However, most of the scholars agree that body dissatisfaction leads to a tendency of developing an eating disorder.

5.0 Conclusion

The present study's results provide an experimental evidence for the hypothesis that an individual with high body dissatisfaction has a higher tendency of developing an eating disorder. Predictably, the trend to have a slender body shape will continue and may gradually become worse in the future due to the change in the perception of beauty towards a skinny body shape. An individual who has a slim body shape has undoubtedly an easier time giving others a positive impression. However, it has also decreased people's ability to be aware of the risks such as low self-esteem and eating disorders to maintain that body shape, especially among youngsters nowadays. Hence, it has led to a phenomenon where everyone pursues and engages in unhealthy diets and eating habits.

The present study would benefit the public, especially the exercisers; they will get to understand more about their bodies and the risks of developing an eating disorder. As for the recommendations, dieters can have a healthy diet plan in order to maintain a healthy body figure on a long-term basis. Furthermore, the false perception that having a thin body is 'ideal' and 'socially accepted' body shape should not be encouraged because not everyone can afford the social pressure. Exercisers should understand that over-exercising is not a good solution to reduce body weight; hence, they are also encouraged to seek professional help for a proper work-out plan suited to their BMIs.

Besides that, it also gives educators an opportunity to have a better understanding on the current issues of body dissatisfaction and eating disorders among the young adults who are currently pursuing their studies. Educators are suggested to educate students on the negative consequences of having negative eating attitudes due to the social pressure or the self desire to have an ideal body shape. Furthermore, educators especially sports coaches should go through students' health assessments by weighing the BMIs of every student. Through this practice, students get to know their current BMIs, while also creating awareness among them to be concerned about the facts of having unhealthy food intake. In addition, educators should run educational campaigns, which focus on health and well-being. An educational campaign creates awareness among all students about the importance of recognizing their current body shapes and the future risks that may occur.

Furthermore, the present research also benefits parents, who are concerned about their children. Parents get to understand more about body dissatisfaction and how it may cause eating disturbances, especially among young adolescents. In the present study, parents are advised to carry the responsibility of keeping an eye on their children's eating attitudes. Once parents notice unusual eating attitudes, such as excessive exercising and fasting for no reason, then parents should take precautions by paying more attention to their children and giving them appropriate advice in practicing a healthy and beneficial way of controlling weight loss.

Lastly, private corporations (the diet industry) should also take responsibility in encouraging healthy slimming plans rather than those unhealthy plans such as 'all-fruit meals'. Private corporations that promote the 'model-thin' ideal should not be materialistic in order to retain their customers on a long-term weight loss basis. Misleading messages such as 'slim is good' should not be promoted, instead they should make an effort to

promote the importance of having a healthy food intake, and give professional advice to people based on their health conditions.

Besides that, there are a few limitations in the present study. The limited sample size of the present study is not representative of all exercisers in Malaysia. Furthermore, the sample of these findings employed the purposive sampling method; therefore it might contribute to selection bias. Moreover, the study was only administered at two locations, which were SEGi University College, Kota Damansara and Fitness First, Subang Jaya. Therefore, the present study would not give any conclusive evidence regarding other exercisers from different locations in Malaysia.

It is important to understand the relationship between body dissatisfaction and eating disorders in lives, either for exercisers or non-exercisers. The research started a new exploration for a clearer understanding of the relationship between body dissatisfaction and eating disorders, especially among young adults. A suggestion for future researchers is to expand the sample size and locations. There are also several implications for future researchers to enhance similar studies. Firstly, a sample size from different locations could increase the reliability of the study. Secondly, future research could specify the type of exercisers who exercise consistently. Thirdly, future researchers could focus on the exercisers' ethnicity, gender, nationality and behavior to see if these factors cause variation in their perceptions toward the ideal body shape.

In general, the findings showed that there was a relationship between body dissatisfaction and eating disorders, which has become a worrying societal issue today. The present study suggests that, especially young adults, need to be aware of the risks of being overly concerned with their body images in order to avoid developing an eating disorder that brings harm to one's health.

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