

**The relationship between self-esteem, social anxiety, body shape concern  
and BMI among college students.**

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## Table of Contents

<b>Acknowledgements</b>	2
<b>Abstract</b>	3
<b>Chapter 1: Introduction</b>	
1.1 Overview	4
1.2 Relevant Literature	6
1.2.1 Self-Esteem	7
1.2.2 Body Image	10
1.2.3 Social Anxiety	14
1.2.4 Body Mass Index	16
1.3 Hypotheses	19
<b>Chapter 2: Methodology</b>	
2.1 Materials	20
2.2 Participants	22
2.3 Research Design	22
2.4 Procedure	23
<b>Chapter 3: Results</b>	
3.1 Descriptive Statistics	24
3.2 Inferential Statistics	26
<b>Chapter 4: Discussion</b>	
4.1 Aims	30
4.2 Main Findings	30
4.3 Analysis by Hypothesis	31
4.4 Strengths and Weaknesses	36
4.5 Future Research & Implications	38
4.6 Conclusion	39
<b>References</b>	41
<b>Appendix</b>	46

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## **Abstract**

This project aimed to assess the relationship and differences between social anxiety, self-esteem, BMI and body shape concern; and to examine gender differences in order to fill a gap in the literature and gain more knowledge of eating disorders. The research was quantitative in design and used three self-reported questionnaires that examined each variable and demographics. Results showed that a relationship existed between the main variables but there was no difference found between the variables in terms of BMI. Also, a gender difference in body shape concern was revealed and finally, self-esteem is a predictor of body shape concern. In conclusion, three hypotheses out of four were either accepted or the null was partially rejected, which builds upon previous research within the area of eating disorders.

## Chapter 1: Introduction

### 1.1 Overview

The following literature review will provide a detailed account of previous theories and research that are relevant to this current study, by taking each variable in turn. Prevalence rates and definitions will be discussed and it will provide a rationale offering a comprehensive explanation as to why this study is of great importance. It will conclude by outlining the hypotheses that will be analysed during the course of this study.

The incidence rates of eating disorders such as anorexia nervosa and bulimia nervosa have increased profoundly during the last fifty years (Nunn, 2009). As these disorders are becoming more widespread and on the constant increase, it is important to look at the possible causes and relationships between how people view their bodies and other factors such as society, self-esteem, Body Mass Index (BMI) and the treatment of body shapes and images within the media and the more recent theory of genetics in order to explain and understand this escalating problem. There is reason to believe that part of the increase is due to greater awareness and more reporting of these disorders (Wakeling, 1996; cited in Polivy & Herman, 2002).

Garner and Myerholtz (1998) described eating disorders as a “persistent over concern with body size and shape indicated by behaviour such as prolonged fasting, strenuous exercise, and self-induced vomiting aimed at decreasing body weight and fat” (Nunn, 2009, p. 80). The current revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, known as the DSM-IV-TR, divides eating disorders into three categories; Bulimia Nervosa, Anorexia Nervosa and ‘Eating Disorder Not Otherwise Specified’. The diagnostic

criteria for eating disorders consist of the control of weight and disordered eating behaviours combined with cognitive and emotional components (Ko, 2010). This obsession of weight and control has encouraged many people to diet; statistics have shown 78% of females and 64% of males are either trying to lose weight or trying not to gain it (Centres for Disease Control and Prevention, 2000; cited by Taylor, 2006).

Prevalence rates vary across time and cultures but according to the National Eating Disorders website, there are nearly eleven million people in America battling with disorders such as anorexia and bulimia and there are two hundred thousand reported cases in Ireland alone (Eating Disorders Association of Ireland). In contrast, it has been suggested by Deirdre A. Rudat(2008), that almost twenty four million Americans may be affected, excluding those with subclinical eating disorders. In addition, the prevalence estimates range from about 3% to 10% of “at-risk females” who are between the ages of fifteen and twenty nine years, with bulimia nervosa patients outnumbering anorexia nervosa patients by at least two to one (Polivy& Herman, 2002, p. 190). Estimated mortality rates range from 5% to just over 8%, this includes suicide (Herzog et al., 2000; Steinhausen et al., 2000; cited in Polivy& Herman, 2002, p. 190). For sufferers of anorexia, up to 20% of them will die prematurely (Taylor, 2006). These alarming prevalence and mortality rates give rise to questions and further investigate the causes and correlations of the disorder in order to try pin point the onset so interventions can be made.

It has been suggested that the point of onset occurs during puberty and the late teenage, early adulthood years by the National Eating Disorders Association of Ireland. This age frame has been supported by Rudat and Jeffrey Arnett. Rudat believes that “collegiate women are particularly at risk” because of the high prevalence rate on campus (2008, p. 1). Her study presents a score of 46% in which female college students suffer with body dissatisfaction (Rudat, 2008, p. 2). In his theory of “emerging adulthood”, Arnett (2000)

conveys a similar time frame for those aged eighteen to twenty five years, which is a particularly confusing time as they are neither adolescents nor young adults and it is when change and exploration occurs (Arnett, 2000). He describes the transition into adult roles as a “distinct period of life course, characterised by change and exploration of possible life directions”. He continues to discuss how this period is distinguished from “relative independence from social roles and from normative expectations” and how cultural influences can be limiting within a time that is so volitional for them (Arnett, 2000, p. 469). Therefore, this present study would be suitable to those attending college and with Arnett’s idea of social and cultural limitations, it lies in conjunction with the prospect of social anxiety and how it could be related to body image and self-esteem.

There is a plethora of research on body shape and image, self-esteem and anxiety levels which are dealt with separately or are investigated with other variables, but it lacks studies in the combination of these three areas whilst investigating them in terms of BMI. Therefore, this current study is of great importance in order to demonstrate and document the way in which people view and feel about their body shape, and how it may be related to their levels of social anxiety and feelings of self-inadequacy among college students in Ireland.

## **1.2 Relevant literature**

Due to the complex nature and many determining factors and influences that combine together, there is not one single cause of an eating disorder (Nunn, 2009). Therefore, eating disorders can be viewed as poorly understood which would support the need for further research in the area. According to Nunn, the relevant identified variables concerned with the development of an eating disorder, includes both interpersonal and intrapersonal factors (2009). For example, interpersonal factors which involves social and cultural influences; and

intrapersonal considers psychological and biomedical factors of the individual; it is thought to be an interaction between these that leads to the development of disordered eating habits (Garner & Myerholtz, 1998; Polivy & Herman, 2002; cited by Nunn, 2009).

A vast amount of research journals, books and articles have attempted to specify the causes of eating disorders (Baker et al., 2009; Nunn, 2009; Polivy & Herman, 2002). However, the “biopsychosocial” model seems to be the most prevalent contribution to eating disorders. This model takes into account all sorts of factors such as sociocultural to biological, integrated with familial, social, cognitive, and personality (Leung et al., 1996; cited in Polivy & Herman, 2002). Again, like most models, the main limitation is that it lacks specificity; however each version of the biopsychosocial model differs from the next. This current study will build upon this biopsychosocial model by examining aspects such as, self-esteem, social anxiety and views on body shape and examining them in terms of gender and BMI.

### **1.2.1 Self-esteem**

Self-esteem has become one of the main measures of psychological health in America and it has been shown to have a strong correlation with eating disorders which will become evident throughout this review (Nunn, 2009). As it is such a primary focus it has been viewed in a critical way too, Neff (2003) argued that this measure is based solely on judgments and contingent self-worth which may become problematic as study advances (Rudat, 2008). There are many theories about the source of self-esteem and where it derives from. William James (1890) suggested that it developed from the accumulation of experiences where the individual's outcome exceeded their original goal and resulted in success.



In sharp contrast, taking biomedical evidence into account, it has been shown that women who suffer from an eating disorder or have a tendency towards it, have high blood pressure, high heart reactivity to stress and high urinary cortisol which suggests that they chronically over react to stress and can lead on to other symptoms such as low self-esteem (Taylor, 2006). However, the more modern theories are influenced by the 'looking-glass self', proposed by Cooley in 1902, whereby "self-appraisals are viewed as inseparable from social milieu" (Heatherton & Wyland, 2003, p. 221). In general, self-esteem is a judgement or an evaluation that is made about a person's own self-worth and the feelings associated with it; these attitudes which are closely related to personal beliefs and social relationships have been known to affect future behaviour (Hudson, 2008). There are both negative and positive outcomes to either high or low self-esteem.

Generally, having a positive view of the self is considered beneficial as those who have a high self-esteem seem to be psychologically happy and healthy. According to Rudat (2008), high self-esteem is generally associated with positive outcomes and greater subjective reports of happiness but it may in fact result in risky behaviour and a concern for narcissistic tendencies that could promote negative outcomes, for example, aggression. Low self-esteem is linked time and time again to a variety of health problems, not just eating disorders. It has been described as feelings that lie within a person; they are negative core beliefs about themselves that derive from "inborn temperamental factors and subsequent experience", for instance, neglect or abuse (Fennell, 1998; cited in Nunn, 2009, p. 92). It has been found to be a predictor for vulnerable or low body satisfaction along with a disturbance in eating attitudes which was confirmed by Nunn's study whereby a "significant negative correlation between self-esteem and eating attitudes indicates that low self-esteem is related to disturbed eating attitudes" (2009, p. 41).

Self-esteem reflects how others react to the individual and so, rejection may cause lower self-esteem and maladaptive behaviours such as eating disorders. Furthermore, dieting can be prone to disruptions that can cause a knock on effect of overeating which often produces a downward slope of self-esteem and can contribute to eating disorders (Heatherton & Polivy 1992). Shape and weight-based self-esteem is reduced in patients with eating disorders and potential research confirms that young females with low self-esteem are more likely to develop disordered eating within a few years (Button et al. 1996; cited in Polivy & Herman, 2002).

Empirical evidence conveys that self-esteem has been found to moderate perfectionism and feelings of overweight for predicting bulimic symptoms; women who display high perfectionism and consider themselves overweight, exhibit bulimic symptoms only if they have low self-esteem whereas women with high self-esteem and similar diathesis-stress conditions are less likely to show bulimic symptoms (Bardone et al., 2000; Vohs et al., 1999; cited in Polivy & Herman, 2002). Longitudinal studies have shown that low self-esteem occurs before bulimic symptoms and that it may be considered a risk factor for eating disorders (Rudat, 2008). This suggests that self-esteem may be a predictor for body shape dissatisfaction.

According to Leung (1993), low self-esteem, fear of negative evaluation and body dissatisfaction have been implicated in the development of eating disorders as seen by the results of his study where he examined those attributes of the self as a multi-faceted self-inadequacy model for eating disorders. It was hypothesised that females who display a self-profile characterised by very low self-esteem, high fear of negative evaluation and body dissatisfaction will report more eating and family problems found in patients with eating disorders than those who don't (Leung, 1993). The participants used in his study completed measures of family characteristics, attributes of self and eating and other

psychiatric symptomatology. Results offered support for the construct validity of the self-inadequacy model and disclosed the two components that the model consists of; body image deficit and general self-image deficit (Leung, 1993).

It is clear from the studies above by Nunn, Rudat, Polivy and Herman; and Leung that there is a strong correlation between self-esteem, feelings of self-inadequacy and eating disorders. The Revised Janis-Field Feelings of Self-Inadequacy questionnaire (Cooper et al., 1986) will be used in this present study to provide either a positive or a negative correlation between self-esteem, body image and social anxiety among college students; it will also be examined as a predictive measure of body shape concern and dissatisfaction. These variables are all considered to be related to eating disorders separately.

### **1.2.2 Body Shape Concern**

Body image was the main focus for many early prevention studies within college students. It was chosen to study over shape or weight concerns because “image” considered a broader set of views and issues but there was a shift in this approach in more recent studies, according to Striegel-Moore and Smolak (2001). The change of focus was as a result of the high scores of weight and shape and how they were involved in predicting the onset of subclinical eating disorders; as weight concerns had a significant correlation with other measures such as the Eating Disorder Inventory combined with the Body Shape Questionnaire (Striegel-Moore & Smolak, 2001). Unpublished data supported this relationship which was discussed by Striegel-Moore and Smolak, stating that twenty college females participated in an eating disorder prevention class whereby it was shown that weight concerns had a significant relationship with body weight-shape concerns with the use of the Eating Disorder Examination Questionnaire. Thus, the Body Shape Questionnaire, the Eating

Disorders Inventory and Eating Disorder Examination Questionnaire subscales measure a common factor (Striegel-Moore & Smolak, 2001, p. 257).

“The presence of disturbed body image is a requisite symptom for both anorexia and bulimia in the DSM-IV-TR” (Nunn, 2009, p. 93). The disturbances are thought to be divided into two dimensions: perceptual body size distortion and evaluate dissatisfaction (Cash & Deagle, 1997; cited in Nunn, 2009). Body dissatisfaction is characterised by negative affect and negative feelings about the self, for instance when women tend to describe themselves as fat and unhappy with their weight. These feelings are channelled into eating disorders but more specifically into negative feelings about the body itself or body dissatisfaction (Polivy & Herman, 2002). Stice (1994) suggested that body dissatisfaction may be classed as a “mediator” between dietary restraint and the development of eating disorders (Pook, Tuschen-Caffier & Brähler, 2008).

The Body Shape Questionnaire by Cooper, Taylor, Cooper & Fairburn, (1987) is a self-report measure of the body shape preoccupations typical of bulimia nervosa and anorexia nervosa. This scale is used to assess body dissatisfaction caused by feelings of being fat. It has been used in studies of body image disturbances and is also approved to be used in clinical settings (Pook, et al., 2008). It is well known that body image disturbance is a core diagnostic feature of anorexia nervosa and bulimia nervosa and is supported by the American Psychiatric Association (Pook, et al., 2008). Anorexia and bulimia nervosa sufferers are extremely and obsessively concerned with body weight and shape, and their self-evaluation is overly influenced in comparison with unaffected individuals but who have a similarly increased body mass index. Patients with binge eating disorders are more frequently bothered by body shape and weight, more dissatisfied with their bodies, and reveal more negative body related cognitions, as seen when participating in a mirror task (Pook, et al., 2008).

Body image disturbance is a “robust risk factor for the development of eating disorders” (Stice, 2002;cited in Pook, et al., 2008). However, it is viewed as a multifaceted construct, involving perception, emotions, cognitive and behavioural aspects of body experience, and includes body dissatisfaction, body image investment, and the overconcern with body weight and shape (Pook, et al., 2008). Lindholm and Wilson (1988) investigated body image disturbance in eating disordered patients by focussing on perceptual aspects of the disturbance which was “operationalized as the accuracy of body size estimation” but contradictory results led researchers to query validity and clinical significance of the accuracy of body size estimation (Hsu and Sobkiewicz, 1991; cited in Pook, et al., 2008, p. 68).

Furthermore, cognitive-behavioural theories believe that body shape is a core point in the maintenance of bulimia nervosa by the dysfunctional evaluation of self-worth, eating, shape, weight and their control of achieving thinness. It seems that self-esteem, which is closely correlated with body shape and image, is the main influence that encourages strict dieting, followed by binge eating, body shape and weight concern (Ko, 2010). In support of this cognitive-behavioural theory, Diane Spangler and Mark Allen investigated the emotional processing of body shape in patients with bulimia nervosa with the use of functional MRI scanning (fMRI). This study looks at body overvaluation that is expressed as a self-schema, whereby definition and evaluation of the self are dominated by body shape and weight (Spangler & Allen, 2012). A self-schema includes “body overvaluation and is posited to result in characteristic eating disordered symptoms such as body shape and weight concern, heightened emotional response to related stimuli and behaviours aimed at body transformations in pursuit of thinness” such as restrictive eating patterns (Spangler & Allen, 2012).

This study aimed to look at the systems that underlie perception and cognitive processing of body related information such as weight, image and shape. It has been found

that people with eating disorders, when compared to a control group, have distinct patterns of neural activation while processing body related information and have a tendency for greater activation of visual and attention systems (Spangler & Allen, 2012). Twelve women with bulimia nervosa and twelve women without an eating disorder were used for the control group, they viewed virtual images of thin and overweight models and had to consider a third persons opinion in which their own body shape was alleged to resemble the virtual model (Spangler & Allen, 2012). Results of this investigation showed that at a cognitive level, concern about body shape is a self-reflective process which was seen in the fMRI scans. The patterns of activation varied among each individual but there was one obvious brain region that was consistently associated with the information processing of the self and that was the dorsal anterior of the medial prefrontal cortex (MPFC). There was greater activity within the MPFC in the bulimia sufferers than the control group when viewing the overweight model but no difference was found when viewing the thin model (Spangler & Allen, 2012). Therefore, the findings were consistent with the cognitive models of eating disorders which theorise that negative body related images are more central to the self-schema and more emotional in a person who has an eating disorder.

According to van der Berg et al. (2010) body dissatisfaction and low self-esteem early in life have been found to predict a range of adverse health related issues, including unhealthy weight-control behaviours and eating disorders. The relationship between self-esteem and body dissatisfaction among adolescents is quite strong, and the emphasison “appearance in making self-evaluations have been implicated in the low levels of self-esteem” (van der Berg et al., 2010). Their study conveyed that body dissatisfaction and concern were found to be greater in late adolescence rather than early and greater among overweight individuals than normal or underweight individuals and greater among females than among males. “Body dissatisfaction appears to be associated with greater impairment in self-esteem in females

than in males” (van der Berg et al., 2010). This gender difference was further supported by Pingitore, Spring and Garfield (1997). Their study examined gender differences in body dissatisfaction and the importance of bodyweight and shape. Results indicated that satisfaction with bodyweight and shape decreased as BMI increased for both genders. However, women showed significantly greater body and weight dissatisfaction than men in most BMI weight categories (Pingitore et al., 1997, p. 402). The research shows that there is a gender difference within body shape dissatisfaction and concern.

### **1.2.3 Social anxiety**

The third variable in this current study is social anxiety which will be examined in relation to self-esteem, body shape concern and BMI levels. Social anxiety is defined by the DSM as a “persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others” (DSM-IV, 2012). It has been suggested that social anxiety is a “risk factor” in the development of eating disorders and these eating disorders “often occur in comorbidity with anxiety disorders” (Jacobi et al., 2004; cited in Ko, 2010, p.17). Researchers have found a significant relationship between social anxiety and shame in eating disorders and those together, play a role in the development of eating pathology as well as acting as a mediator between body dissatisfaction and disturbed eating behaviours (Ko, 2010). Leary & Kowaliski (1995) stated that social anxiety has a moderate correlation with trait self-esteem and that the relationship between them is indirect as it is mediated by people and their personal beliefs about how others may perceive them; because people with low self-esteem assume that they are regarded in a less favourable and approving manner than people who have high self-esteem and therefore, experience higher levels of social anxiety (Leary & Kowaliski, 1995). As social anxiety is a

strongly self-related disorder, it correlates positively with low self-esteem which also closely relates to disordered eating pathology. (Ko, 2010).

Gross and Rosen (1988) reported that women who suffer from eating disorders have a higher need for social approval and achievement, and therefore, experience higher social anxiety and lower self-esteem and in addition, social anxiety is a factor that predicts general eating disorder symptomatology (Ko, 2010). This idea of early onset is supported by the studies that suggest the onset of anxiety disorders occurs during early childhood, which is usually earlier than the onset of a typical eating disorder (Kaye et al., 2004; cited in Ko, 2010). Similarly, the outcome of a study by Godart, Flament, Lecrubier and Jeammet (2000) agrees that anxiety disorders can exist before eating disorders. Thus, it is possible that anxiety is a factor to predict disordered eating symptoms (Ko, 2010). Items of the Body Shape Questionnaire (Cooper et al., 1987) assess body dissatisfaction in regard to weight, feelings toward the individual's body size and shape. Therefore, the concept of a social appearance anxiety might be a suitable aspect to measure along with body dissatisfaction.

The relationship between body shame and social appearance anxiety in eating disorders has recently been the centre of attention and according to Gilbert et al. (2000), how one appears to others is an important factor; therefore, both social anxiety and shame can be “shown as overlapping in contexts of social attractiveness, evaluation and rejection or criticism” (Ko, 2010). Thus, a significant relationship of body shame and social appearance anxiety in eating disorders is expected and researchers found that a strong positive correlation exists in eating disorders; and needs to be regarded as an important influencing factor (Grabhorn et al., 2006; cited in Ko, 2010).

Women with disordered eating symptomatology often have a high need for social approval and can experience high social anxiety and low self-esteem; this may be due to



the ideal body portrayed in their society. These women are more concerned with their appearance and dieting, it is possible for these behaviours to progress into disordered eating attitudes (Ko, 2010). This concept is further supported by Striegel-Moore, Silberstein and Rodin (1993) who claim that the body is a “social object” and is constantly open to the judgement of others. If a woman feels her physical appearance is inadequate, she may become focused on others evaluations of her body and how they perceive her, then social anxiety seems to be a likely result. “Hence, we would predict a relationship between body image dissatisfaction and social anxiety” (Striegel-Moore et al., 1993, p. 297). To further validate the idea that social anxiety and eating disorders may have a relationship, Swinbourne confirms that eating disorders and anxiety disorders co-occur; 65% of women with eating disorders also met the criteria for at least one anxiety disorder and 69% of which said that anxiety preceded the onset of their eating disorder (2008, p. 3).

Research suggests that women with bulimia and anorexia experience significant difficulties in the area of social adjustment which would be characterised by social anxiety (Fairburn et al., 1990; cited in Striegel-Moore et al., 1993). Related research suggests that disordered eating is linked to deficits in social self-confidence and preoccupation with self-presentation. The term “social self” was coined by William James in 1890 (Striegel-Moore et al., 1993). The findings of this study strongly support the hypothesis that social-self concerns are integrally linked to body dissatisfaction and eating disorders.

#### **1.2.4 Body Mass Index**

BMI is the ratio of weight to height measures in kilograms/metres<sup>2</sup>. To be classed as underweight, BMI must be 18.5 or under, normal weight is 18.5 to 24.9 and over weight is 25 plus (Centre for Disease Control & Prevention, 2011). These three groups will be used within this study to assess social anxiety, self-esteem and body shape concern at the different levels.

It has been suggested that self-esteem and BMI are related and that BMI may be a causal role in the development of lower self-esteem experienced by overweight individuals (Hesketh et al., 2004; cited in Hudson, 2008).

Body image has also been explored in relation to BMI in various studies; Cash and Fleming's results show that an elevated BMI highly correlates with body image and self-dissatisfaction among college students (2002; cited in Hudson, 2008). Furthermore, Burger & Doiny (2002) also found that a higher BMI was associated with a negative body image and it predicted weight dissatisfaction for females (Hudson, 2008). Rosenblum and Lewis (1999) and Field et al. (2001) both carried out studies that demonstrated that BMI is a consistent predictor of adolescent girls and boys dissatisfaction (Bearman et al., 2006). Therefore it has been found that BMI could be a major contributor to body image and the way females view their body as it was a consistent predictor of body image (Hudson, 2008).

However, there is conflicting research that is unsupportive of the association between BMI and body satisfaction; Bearman, Presnell, Martinez and Stice (2006) found that adolescent girls had a higher rate of body dissatisfaction over all, in comparison to boys but BMI did not predict this. Barker & Galambos (2003) also found that BMI did not predict body dissatisfaction for adolescent boys and girls (Bearman et al., 2006).

BMI has been shown to be associated with self-esteem in non-clinical populations (Hudson, 2008, p. 19). They have been shown to be related in a longitudinal study by Hesketh et al., (2004) and it was seen that BMI continued to play a causal role in the development of lower self-esteem experienced by overweight individuals, particularly adolescents (Hudson, 2008). Conversely, there have been conflicting studies that suggest there is no link and that BMI does not significantly predict self-esteem but that is in a sample of clinically depressed African Americans (Palmer, 2003; Hudson, 2008).

The literature suggests that eating disorders result from the convergence of several facilitating factors, but the causal mechanisms are not yet identified. No single agent seems to be sufficient, but perhaps distinguishing among stronger and weaker contributory factors will shed some light. It is difficult to imagine developing an eating disorder without the presence of body dissatisfaction, although the majority of individuals who are dissatisfied with their bodies will never go on to develop an eating disorder (Polivy & Herman, 2002). Similarly, depression or anxiety and markedly low self-esteem are prominent features of eating disorders, and seem to be virtually invariant precursors of their development (Polivy & Herman, 2002).

Other elements that appear to be strongly implicated in the development of disordered eating habits include environment, cognitive distortions such as obsessive thoughts, personality features such as a need for control and inadequate identity formation have been plausibly suggested as being necessary for the development (Polivy & Herman, 2002). Other risk factors that have received much research attention include sociocultural pressure to be thin and dieting, biological contributors, genetics and cognitive behavioural factors all appear to contribute to the development of eating disorders, and the more of them impacting on an individual, the greater the risk (Polivy & Herman, 2002). Some or all of these factors may be shown to be a primary cause of eating disorders, but for this present study the connection and relationships between social anxiety, body shape concern, self-esteem and BMI must be analysed.

### 1.3 Hypotheses

The first hypothesis ( $H_1$ ) suggests that there will be a relationship between body shape concern, social anxiety and self-esteem.

The second hypothesis ( $H_2$ ) claims that self-esteem and social anxiety are predictors of body shape concern.

The third hypothesis ( $H_3$ ) claims that there will be a gender difference in body shape concern.

Lastly, the fourth hypothesis ( $H_4$ ) suggests there will be a significant difference between BMI and the three groups of body shape concern, feelings of self-inadequacy and social anxiety.

## Chapter 2: Method

### 2.1 Materials / Apparatus

Each participant was presented with a self-administered pen and paper questionnaire booklet which consisted of demographic questions, such as gender, age, height and weight in order to calculate each individual Body Mass Index percentage. Standardised scales which are well validated due to their use in previous research with the target sample and are therefore, considered to be reliable. To ensure accurate responses, the participants were informed that the data would remain anonymous and were given the option to withdraw from the survey at any stage. The questionnaires used are as follows:

#### Body Shape Questionnaire (Cooper, Taylor, Cooper & Fairburn, 1986) Appendix: B

This scale was used to assess the participants concern for their body shape. It consisted of thirty four questions rated on a six point Likert scale (1 meaning “never” and 6 meaning “always”) which assessed how the participant has felt about their appearance over the past four weeks. They were advised to circle the answer that was most applicable to them. It included questions such as “Have you been so worried about your shape that you have been feeling you ought to diet?” There was no reverse coding and the scores were all added together to produce a final number. The higher the score, the higher the levels of self-consciousness regarding body shape concern. The scoring guideline that will be used as a basis for assessing the severity of the results will be from Kuan, Ho, Shuhaili, Siti&Gudum (2011). In their study, below 80 meant the participant has no preoccupation with their body, 81-110 means a slight preoccupation, 111-140 means a moderate preoccupation and about 140 means they have severe body concern. The appropriate levels of reliability and validity have been met (Ghaderi& Scott, 2004).

### Interaction Anxiousness Scale (Leary, 1993) Appendix C

The IAS questionnaire is composed of fifteen items that measure social anxiety by providing statements that's are measured on a five point Likert scale ranging from 1 (not at all characteristic of me) to 5 (extremely characteristic of me). Respondents indicate the extent of their agreement with the statement by selecting a number. It contains both positive and negative statements, for example "I sometimes feel tense when talking to people of my own sex if I don't know them very well". Scoring of the four positive questions, numbers, three, six, nine and fifteen meant they needed to be reversed scored. The scale scores range from fifteen, indicating low social anxiety to seventy five which indicates a high level of social anxiousness. IAS has demonstrated reliability and validity as a measure of tendency to experience social anxiety in conversational settings (Leary, 1993).

### Revised Feelings of Inadequacy Scale (Fleming & Courtney, 1984) Appendix D

This twenty three question inventory is scored on a scale of 1 to 5 using the following terms; 1 meaning "very often" or "very confident" and 5 meaning "practically never" or "not at all confident". An example of a question is, "How often do you feel worried or bothered about what other people think of you?" The participant was required to circle the number which was most significant to them. The majority of the questions are reversed scored, only questions five, six and thirteen were not. This scale measures self-esteem primarily by asking the participants to indicate how they feel in questions about social anxiety, self-consciousness and personal worthlessness. Low scores denote high feelings of self-inadequacy which results in low self-esteem and high scores are indicative of high self-esteem.

### Body Mass Index

BMI was designed to give an approximate percentage of body fat based on a person's height and weight measurements. It is both age and gender independent once the individual is an adult and as all the participants were nineteen and older, the adult BMI calculating

measurements were used. To calculate, weight in kilograms was divided by the square height in meters ( $\text{kg}/\text{m}^2$ ). In accordance with international classification adapted by the World Health Organisation (WHO, 2004), scores should be divided into three groups; scores below 18.5 are considered underweight, normal weight is between 18.5 and 24.99 and over weight is anything that exceeds 25.

## **2.2 Participants**

Participants for this study were obtained from a non-clinical sample of students within Dublin Business School. This sample is a convenience sample as it was readily available in the college itself. The individuals were approached by the researcher at the beginning of class; permission from the lecturer was sought prior to the study via email. A total of one hundred and eleven students took part; forty three males and sixty eight females. The age range was from nineteen years old to twenty five.

## **2.3 Research Design**

This study used a quantitative research design as well as an independent group's design due to each respondent completing one self-reported questionnaire, no repeated measure were taken. The questionnaires were regarding body shape concerns (BSQ), social anxiety (SAQ) and the third assessed their self-esteem with the Feelings of Self-Inadequacy Scale (SIQ). Demographic variables were also reported. It is also correlational in design and contained independent and dependent variables as well as criterion and predictor variables. Dependent/criterion variable is body shape and the independent/predictor variables are social anxiety, feelings of self-inadequacy and BMI.

## 2.4 Procedure

DBS lecturers were contacted prior to the study; permission was sought in order to conduct the research within class time. A brief speech was given to the participants before handing out the questionnaires explaining the purpose of the study. They were told that the current study was “interested in looking at the relationship between social anxiety, body shape concern and feelings of self-inadequacy in order to gain a better understanding of eating disorders”. Participants were assured that their responses were entirely anonymous and that they had the right to withdraw at any stage.

Consenting participants were given a booklet which included a cover sheet providing details of the study and instructions for completing the questionnaire, the three questionnaires and an information sheet that listed support centres for anyone who wished to speak to someone confidentially if they felt affected by any of the issues raised. The process took approximately fifteen to twenty minutes and once all participants completed the questionnaires, they were then given the opportunity to ask any questions they had and were given an answer in full. The data was entered into SPSS and safely stored in a password protected folder on the researcher’s laptop, while the hardcopy of the data was stored in a safe in the researcher’s home.



## Chapter 3: Results

The data collected consisted of the participants' scores on the Body Shape Questionnaire (Cooper et al., 1986), the Interaction Anxiousness Scale (Leary, 1993) and the Revised Feelings of Inadequacy Scale (Fleming & Courtney, 1984). The data was sorted, stored, the BMI's were calculated and it was statistically analysed using the Statistical Package of Social Science (SPSS) software for Windows (Version 18). Descriptive and Inferential statistics were carried out and the results are reported below.

### 3.1 Descriptive Statistics

There were 111 participants in total which consisted of (n=43) males (38.7%) and (n=68) females (61.3%). Age ranged from a minimum of 19 years old to a maximum of 25 years old, the mean (M) age was 22.36 and the standard deviation (SD) was 1.962. BMI was divided into three groups, with a total of 111 participants, 103 were accounted for in this measure. The overweight category contained 27 people (24.3%); normal weight had 73 people (65.8%) and underweight with 3 people (2.7%). Interestingly, BMI varied within gender; males had a higher BMI overall than females: males (n=20) and females (n=7). These frequencies and percentages are represented in Table 1 and 2 below.

Table 1: *Frequencies and percentages of the overweight group in males and females*

BMI Group	Gender	Frequency	Percent
Overweight	Male	20	74.1%
	Female	7	25.9%
	<i>Total</i>	27	

Table 2: *Frequencies and percentages of the normal weight group in males and females*

BMI Group	Gender	Frequency	Percent
Normal weight	Males	23	31.5
	Females	50	68.5
	<i>Total</i>	73	

The results are represented in a bar chart, Figure 1, in order to help visualise the extremity between both genders.

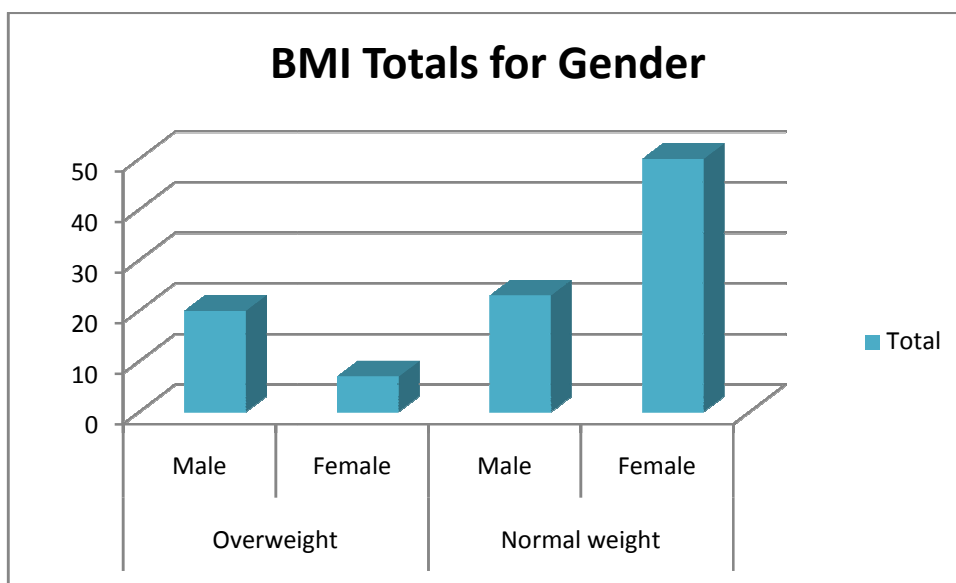


Figure 1: *BMI totals in males and females*

### 3.2 Inferential Statistics

#### *Correlations for Hypothesis 1:*

A Pearson's Correlation Coefficient was carried out for  $H_1$ , in order to identify whether there was a relationship between social anxiety, feelings of self-inadequacy and body shape concerns in terms of BMI. There are three levels of BMI but due to the low level of participants in the underweight section ( $n=3$ ), the subjects were removed from the analysis.

Firstly, the overweight group were analysed regarding their relationship with body shape concern, social anxiety and feelings of self-inadequacy. The mean scores and standard deviations are displayed in Table 3. The mean score for body shape concern was 84.96 with a standard deviation (SD) of 46.14; for social anxiety, the mean was 42.03 (SD = 14.52) and the mean for self-inadequacy was 61.23 (SD = 16.99). A Pearson Correlation Coefficient found that there was a strong significant relationship between body shape and social anxiety ( $r = .621, p < .01, 2$ -tailed). Similarly, it was found that there was a strong, significant relationship between body shape and self-inadequacy ( $r = .604, p < .01, 2$ -tailed). It was also found that there was a strong, significant relationship between social anxiety and self-inadequacy ( $r = .636, p < .01, 2$ -tailed).

Regarding the normal weight group (Table 4) the mean score for body shape concern was 83.82 (SD = 37.2); social anxiety mean was 41.51 (SD = 10.8) and the mean for self-inadequacy was 62.28 (SD = 14.0). A Pearson Correlation Coefficient was used to determine the relationships and it found that there was no significant relationship between body shape concern and social anxiety ( $r = .043, p > .05, 2$ -tailed). It found a moderately significant relationship between body shape concern and self-inadequacy ( $r = .462, p < .01, 2$ -tailed). Finally a moderate significant relationship was found between self-inadequacy and social anxiety ( $r = .495, p < .01, 2$ -tailed).

Table 3: *Correlation table for overweight group*

	Mean	Standard Deviation
Body Shape	84.96	46.1
Social Anxiety	42.03	14.5
Self-inadequacy	61.23	16.9

Table 4: *Correlation table for normal weight group*

	Mean	Standard Deviation
Body Shape	83.82	37.2
Social Anxiety	41.51	10.8
Self-inadequacy	62.2	14.0

*Multiple Regression Test for Hypothesis 2:*

Multiple regression was used to determine whether feelings of self-inadequacy and social anxiety were predictors of body shape concern. Preliminary analysis was conducted to ensure there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The results of the analysis indicated that one of the predictors explained 28% of the variance ( $R^2 = .28$ ,  $F(2, 94) = 19.68$ ,  $p < .001$ ). It was found that feelings of self-inadequacy significantly predicted body shape concern ( $\beta = .577$ ,  $p < .001$ , 28% CI = .541 – 2.146). Interestingly, there was a non-significant interaction between social anxiety and body shape concern ( $p > .05$ ). Therefore, the null hypothesis was partially rejected.

*Mann-Whitney U Test for Hypothesis 3:*

A Mann-Whitney U test was carried out to examine if there would be a gender difference in body shape concern. Figure 2 below, displays the results which showed a significant difference in males and females in terms of body shape concern ( $z = -4.842$ ,  $p = 0.00$ ). Males had a mean rank of 36.49 in comparison to the mean rank of 66.60 for females. The Mann-Whitney U revealed that females scored almost double that of males, which indicates that there is a gender difference within body shape concern. Therefore, the hypothesis was accepted and the null hypothesis was rejected.

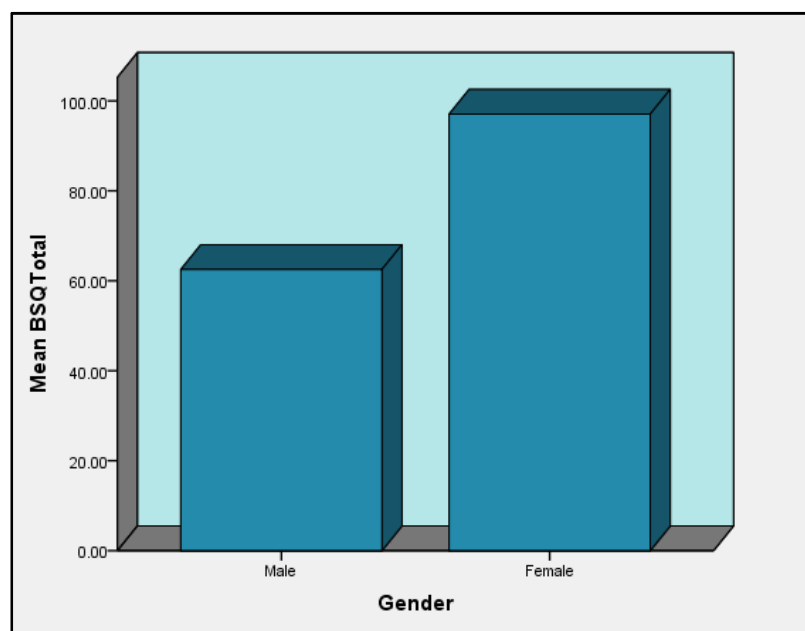


Figure 2: *Gender difference in the mean scores of the Body Shape Questionnaire*

*One-Way Anova for Hypothesis 4:*

A one way analysis variance was carried out to examine if there was a significant difference between social anxiety, feelings of self-inadequacy and body shape concern in terms of the different levels of BMI. Results showed that the number of errors in BMI did not differ significantly between the three groups, ( $F(2, 98) = .896, p = .411$ ). Therefore, the null hypothesis must be accepted.

*Additional Findings:*

Interestingly, in terms of gender, it was noticed that the higher the BMI level was, the higher the body dissatisfaction became for both males and females. As seen in Figure 3 below, there is a jump between the BSQ scores for normal weight and overweight male's. Female's scores are steadier than the males but both genders have reached over 140 on the BSQ which suggests they have a severe preoccupation with their body.

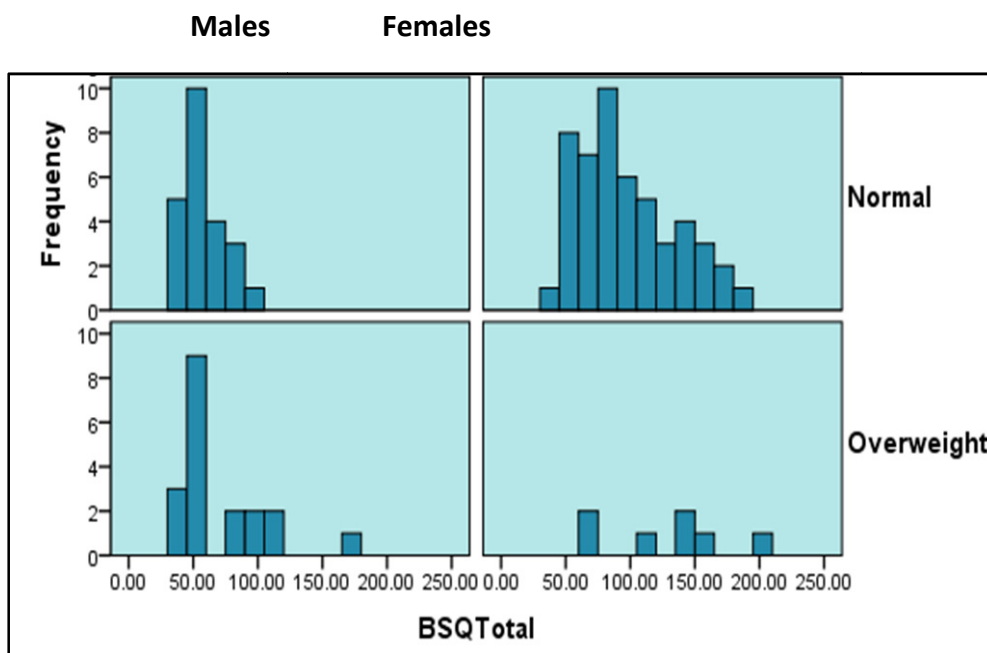


Figure 3: Males and females results in the Body Shape Questionnaire in terms of normal weight and overweight BMI

## **Chapter 4: Discussion**

### **4.1 Aims of the Study**

The main objectives of this study are to try and establish whether a link exists between social anxiety, self-esteem, BMI and body shape concern. In doing so, it is important to investigate if there is a significant relationship between these variables. It will also be interesting to examine if self-esteem levels and social anxiety are predictors of body shape concern; this seems to be directed at females in the majority of studies and literature so investigating the gender difference will be a main focus. Lastly, a difference in the values of body shape concern, self-esteem and social anxiety will be expected to be seen in terms of the different BMI levels. The combination of these results will determine if the variables suggest any effect on the development of eating disorders and to shed some light on the onset of eating disorders.

### **4.2 Main Findings**

The main findings include a strong significant correlation between social anxiety, self-esteem, body shape concern in terms of people with high (overweight) BMI and normal BMI, the underweight group was omitted from the research due to the lack of participants. Self-esteem, measured by the Feelings of Inadequacy scale (Fleming & Courtney, 1984) was found to be a predictor of the way people view their bodies but social anxiety was not seen to have an effect on this prediction. A gender difference was found in the results deriving from the Body Shape Questionnaire (Cooper et al., 1986), females scored higher than males by almost double. Lastly, there was no significant difference found between the scores of social

anxiety, self-esteem and body shape concern within the two BMI groups, overweight and normal weight.

### **4.3 Analysis by Hypothesis**

#### *Hypothesis 1:*

H<sub>1</sub> stated that there will be a relationship between social anxiety, self-esteem and body shape awareness. The results indicated that there was a significant relationship between the three variables within the overweight BMI category and two out of three in the normal weight category, which were body shape concern and self-esteem; and social anxiety and self-esteem. No significant correlation was found between social anxiety and body shape concern within the normal weight group. Due to the lack of participants in the underweight group, these results were omitted. Thus, the null hypothesis was partially rejected.

These results from the current study are supported by previous research that suggests there is a relationship between these three variables such as Burger and Doiny, (2002); Cash and Fleming (2002); and Ko (2010). Burger and Doiny found that body dissatisfaction and concern are associated with high BMI (Hudson, 2008). Further support suggests a relationship between body image and attitudes have a negative effect on self-reported self-esteem and are correlated (Cash & Fleming, 2002; cited in Hudson, 2008). “Body image measures have been found to significantly correlate with self-esteem for student women” (Lowery et al., 2005; cited in Hudson, 2008, p. 17). A study in adolescents reported that poor body image is associated with low self-esteem and elevated anxiety and that body dissatisfaction has in turn been correlated to eating disorders (Newman et al., 2006; Furnham et al., 2002; cited in Hudson 2008). Social anxiety correlates positively with low self-esteem



and it has been found that there is a strong relationship between body shame and social anxiety and it has been suggested that these correlations are due to the higher need for social approval; these results have been seen to be closely related to disturbed eating pathology (Ko, 2010). Both studies by Leung (1993) and Gross and Rosen (1988) support that women with eating disorders have higher social anxiety and lower self-esteem (Rudat, 2008).

*Hypothesis 2:*

“Social anxiety and self-esteem are predictors of body shape concern” is the premise of H<sub>2</sub>. The results from this current study show that self-esteem is a predictor of body shape concern but social anxiety is not a predictor. Consequently, the null hypothesis was partially rejected. Nunn (2009) study is supporting evidence that self-esteem is a predictor for those with low body dissatisfaction and that it is related to disturbed eating attitudes. Longitudinal studies have shown that low self-esteem comes before the eating disorder symptoms (Rudat, 2008). Gross and Rosen (1988) showed that social anxiety is a predicting factor of eating disorder symptomology; it has been described as a “risk factor” for the onset of bulimia and anorexia (Rudat, 2008).

The results of the current study are based on non-clinical participants which suggest that social anxiety may be a component of someone who has an eating disorder but it does not predict it, as it is in contrast with studies that say it is a predictor but they’re all based on clinical samples. SA stems from childhood therefore predictor but conflicts with my results. Low SE has been found to predict increased vulnerability to body image dissatisfaction in a student population (Markham et al., 2005; cited in Hudson, 2008).

### *Hypothesis 3:*

The third hypothesis states that there will be a gender difference in body shape concern. The results from this present study conclude that there is a gender difference in body shape concern and dissatisfaction as females scored almost double of what the males scored on the Body Shape Questionnaire, therefore the hypothesis was accepted.

This is supported by previous research by Barry, Grilo and Masheb(2002) whereby their study reported findings that females had a higher level of body dissatisfaction by using the Body Shape Questionnaire, along with their greater drive for thinness which may suggest why the current study's results have a similar outcome. According to Kuan et al. (2011), in general, males tend to underestimate their body weight, but females overestimate their body weight. Di Pietro and Silveira (2009) reported a statistically significant difference in the means of the BSQ; women showed higher dissatisfaction than men.

Interestingly, the results from the twin study by Baker et al. (2009) showed that the difference between males and females could be due to genetic factors as it is believed there are very high heritability coefficients for anorexia nervosa (AN) and bulimia nervosa (BN); 50-83% of variance within AN and BN is genetic (Klump et al., 2000; cited in Polivy & Herman, 2002). According to Baker et al. males tend to be more dissatisfied with their bodies when they are underweight or overweight, whereas females are most satisfied when underweight (2009). Another twin study by Eiben (2007) examined aspects of body dissatisfaction and drive for thinness and it showed lower heritability rates for males than females (Baker et al., 2009).

Other factors include the research which indicates oestrogen may play an important role in disordered eating in females which is further supported by Edler et al. (2006) whereby their study shows eating disorders may be related to effects of cyclic hormonal changes which

would not be expressed in males (Klump et al., 2005; cited in Baker et al., 2009). Similarly, testosterone levels could impact disordered eating, as the American Psychological Association has suggested the decreased levels of testosterone have previously been linked to anorexia in males (APA, 2000). Social and psychological factors relevant to eating disorders include the cultural pressure to be thin, which is much greater for females than for males (Baker et al., 2009). Other psychological factors such as childhood sexual abuse, personality characteristics, and depression or anxiety may also play a role. These differing social and psychological factors could produce separate pathways to eating disorders development in males and females.

#### *Hypothesis 4:*

H<sub>4</sub> was rejected as it stated “there will be a significant difference between BMI and the three groups of body shape concern, feelings of self-inadequacy and social anxiety” and results revealed that there was no statistical difference between these variables in terms of BMI. This lack of difference supports H<sub>1</sub> that all the variables are correlated, it means that there was no difference in the scores between the participants in the normal weight group versus the overweight group which was to be expected. However, this study suggests that BMI may not be the best or most reliable predictor for grouping individuals. BMI is the actual weight and body fat percentage of an individual, perhaps a variable that relies more on their perception may have been more suited rather than the reality.

Cheung et al. (2007) reported that overweight female adolescents were motivated to implement weight control behaviours such as restricting calorie intake, purging or self-medicating, by their body perception, rather than their actual BMI (Kuan et al., 2011). Furthermore, according to Bearman et al., (2006), BMI was not found to predict body image

dissatisfaction. Both studies support the fact that BMI may not be the best predictor as it is not perceptual; this can be in support of the results, how people scored in terms of BMI does not amend their different scores on the questionnaires. As Cash and Pruzinsky (1990) described it, “body image disturbance is a multifaceted construct, encompassing perceptual, affective, cognitive and behavioural aspects of body experience, as well as a broad range of phenomena such as body dissatisfaction, body image investment, and overconcern with body weight and shape” (Pook et al., 2008, p. 68).

Like this present study, the study by Pook et al. (2008) revealed that BMI did not predict body dissatisfaction; in theory, an increase in body weight should cause the person’s body to diverge from the thin ideal to a form of body dissatisfaction (McCarthy, 1990). This suggests that an persons perception of weight may be of greater psychological relevance than their physical dimensions(BMI). It may also be possible that BMI measurement is too broad; Bearman et al. suggest that in the case of adolescent, the physical changes that they undergo during development does not distinguish between weight gained and lean muscle versus fatty tissue. (2006)

### *Additional findings*

Interestingly, there was a significant difference in gender in terms of BMI. Barry et al., (2001) found similar results where the males had a significantly higher current BMI than females and were more likely to be classified as obese as females. This can be seen in the present study in results section, Figure 3. As BMI increased, both sexes became disproportionately more dissatisfied with their body, which is line with previous research by Pingitore et al. (1997), their results revealed both normal weight and overweight females showed greater body dissatisfaction than males.

This current study's results replicate those of the study of Pingitore et al.(1997). They both demonstrate that there are commonalities and differences in how males and females in college, experience their body shape. For both men and women, satisfaction with both body shape and weight decreased as BMI increased. Gender differences in satisfaction with body shape and weight also existed, both of which remained significant after the BMI groupings had been removed. The gender difference indicated that women surpassed men in body shape concern, as females scored over 200 on the BSQ. Correspondingly, the decline in body satisfaction was less severe for men than women. According to Pingitore et al. a larger body size was more likely to predict body shape concern than weight dissatisfaction. The findings from both studies suggest that "males may be moving closer to women on the continuum of body dissatisfaction" which causes matters for concern (Pingitore et al., 1997, p. 407).

#### **4.2 Strengths and Weaknesses**

There were a number of strengths and weaknesses within this research project and both will be discussed in turn. Firstly, very little research has been done on the three main variables combined; social anxiety, self-esteem and body shape concern in regards to BMI and gender in this specific age group, this study fills a gap within the Irish literature and furthers the research in the area.

The study as whole is quite robust and comprehensive. It is straight forward and contains few restricting criteria which allows for a broad perspective and would enable future research to replicate and follow on with the premise of the study.

A methodological strength of this study was the use of valid and reliable psychometric tests. All three questionnaires have been found to be consistently reliable

measures and have been used numerous times within different research studies. The use of these measures strengthens the results and conclusions because the information gained is likely to be measuring the area of interest directly.

Despite the strengths of this study, there were also some limitations that need to be addressed. Firstly, the lack of participants in the underweight category of the BMI scale meant that they had to be removed from the research as no tests could be ran on such a small number of people. This unfortunately, does not give an all-roundperspective of the three BMI groupings and it restricted the volume of findings as they could have had an impact on the overall results. More conclusions could have been possible about the effects of the different BMI levels in terms of all three variables.

The second limitation of the present study was the small sample size. A larger sample would have given more power to the associations found between the variables, it may have impacted some of the results; some of the non-significant results could have reached a significant level if there had been a larger number of participants. The increase in numbers would have also made it possible to gain more underweight participants for the BMI analysis. The small sample size also means that the conclusions drawn from the multiple regression test used for H<sub>2</sub> should be viewed with caution as it only has 28%. Equal amount of females and males would be beneficial as the groups would have been more representative.

Another factor that may serve as a limitation is that the research depended on self-reports. These results were analysed based on the assumption that participants responded to the questionnaires honestly and accurately, answering correctly how they feel. However, it is possible that participants responded to these questions based on what they believe is more socially acceptable, therefore leading to a bias in their answers, resulting in a possible bias in the overall research.

Finally, the conclusions based on the correlation analysis need to be viewed with caution also as the relationship between the variables in terms of BMI can only be determined; they do not provide any information on the causal or predictor factors.

### **4.3 Future Research& Implications**

Further research may possibly gain more beneficial results by eliminating BMI as a predictor variable. The present study found that it did not have an impact on any of the three variables; this may be due to the fact that it is actual weight and not based on perception. Perhaps future studies could introduce a different predictor variable that is more reliable on perceptions, such as perfectionism or the locus of control.

Another factor which could be altered is the age group; rather than just focusing on nineteen to twenty five year olds, a wider range of ages could be utilised or used to compare with other age groups. This limited age group may have restricted the current study and future studies may benefit from having a larger, more general population.

Further replication of this study could benefit from examining these measures longitudinally and it would help to determine whether body shape concern, social anxiety and feelings of self-inadequacy could change over an adult's life.

The current study has shown that there is a strong significant correlation between the main variables: social anxiety, self-esteem and body shape concern. This does not suggest that these variables are causal factors of eating disorders but it shows they are related. Self-esteem has shown to be a predictor of body shape concern and therefore, interventions could be put in place in order to combat this issue of low self-esteem before it develops into an eating disorder.

Gender difference exists within BMI and body shape concern, revealing that males have a higher BMI than females. This result shows that obesity may be on the increase for males which can possibly cause negative effects such as heart disease, or psychological illnesses like eating disorders and social stigma.

A gender difference was also found in the levels of body shape concern; females scored double of what males did which suggests that females are more susceptible to the notion of the 'thin ideal' and social pressures. However, twin studies have revealed some interesting theories suggesting eating disorders may be linked to genes. Further research into the area genetics could provide more information.

These results highlight that there is a high BMI level across the board and a high level of body dissatisfaction over all which suggests that mental health professionals need to be aware that these variables and issues can affect each other and they may lead to the development of eating disorders or disturbed eating attitudes and patterns. This implies that more interventions and more research needs to be done in the area in order to control the increasing levels of eating disorders, whether it is anorexia, bulimia or obesity.

#### **4.5 Conclusion**

The main findings of this research study include the significant relationship between social anxiety, body shape concern, self-esteem and BMI levels and that there is a gender difference within body shape concern, whereby women scored higher than males. Thirdly, gender differences exist within BMI levels; and that self-esteem can be viewed as a predictor of body shape dissatisfaction. Finally, there was no significant difference between the three



main variables when viewed in regard to BMI levels. In conclusion, this current research is in line with many previous studies which have demonstrated that there is a possible link between these variables and they can contribute and have an impact on the development of eating disorders.

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## Appendix

### *Cover Letter: Appendix A*

Dear Participant,

My name is Alex Mc Donald and I am a Postgraduate student at Dublin Business School.

For my thesis, I am examining the relationship between body shape, social anxiety and feelings of self-inadequacy among college students in order to help in the understanding of eating disorders and I am inviting you to participate in this research study by completing the attached questionnaires.

The following questionnaires will require approximately 15 minutes to complete. There is no known risk although it may be considered a sensitive topic so if any issues may arise, please note the helpline contact information given to you on a separate page. Participation is strictly voluntary and you may refuse to participate at any time. In order to ensure that all information will remain confidential, please do not include your name or student number; the received data will be transferred from paper record to electronic format and stored on a password protected computer.

If you choose to participate in this project, please answer all questions as honestly as possible and completion and return of the questionnaires will indicate your willingness to participate in this study.

If you require additional information or have questions, please contact me at the email address listed below.

Thank you for taking the time to assist me in my research.

Sincerely,

Alex Mc Donald ( [REDACTED] )

***Body Shape Questionnaire (Cooper, Taylor, Cooper & Fairburn, 1986) Appendix: B***

Gender: (please circle)

Male

Female

Height:

Weight:

**We should like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all the questions**

Please rate yourself in the past **FOUR** weeks as follows:

**1 = Never**

**2 = Rarely**

**3 = Sometimes**

**4 = Often**

**5 = Very Often**

**6 = Always**

- |  |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
| 1. Has feeling bored made you brood about your shape?                                      | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> |
| 2. Have you been so worried about your shape that you have been feeling you ought to diet? | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> |
| 3. Have you thought that your thighs, hips or bottom are too large rest of you?            | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> |
| 4. Have you been afraid that you might become fat or fatter?                               | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> |



5. Have you worried about your flesh being not firm enough? 1 2 3 4 5 6
6. Has feeling full (e.g. after eating a large meal) made you feel fat? 1 2 3 4 5 6
7. Have you felt so bad about your shape that you have cried? 1 2 3 4 5 6
8. Have you avoided running because your flesh might wobble? 1 2 3 4 5 6
9. Has being with thin women made you feel self-conscious about your shape? 1 2 3 4 5 6
10. Have you worried about your thighs spreading out when sitting down? 1 2 3 4 5 6
11. Has eating even a small amount of food made you feel fat? 1 2 3 4 5 6
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably? 1 2 3 4 5 6
13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)? 1 2 3 4 5 6
14. Has being naked, such as when taking a bath, made you feel fat? 1 2 3 4 5 6
15. Have you avoided wearing clothes which make you particularly aware of the shape of your body? 1 2 3 4 5 6
16. Have you imagined cutting off fleshy areas of your body? 1 2 3 4 5 6
17. Has eating sweets, cakes, or other high calorie food made you feel fat? 1 2 3 4 5 6
18. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape? 1 2 3 4 5 6
19. Have you felt excessively large and rounded? 1 2 3 4 5 6
20. Have you felt ashamed of your body? 1 2 3 4 5 6
21. Has worry about your shape made you diet? 1 2 3 4 5 6

22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)? 1 2 3 4 5 6
23. Have you thought that you are in the shape you are because you lack self-control? 1 2 3 4 5 6
24. Have you worried about other people seeing rolls of fat around your waist or stomach? 1 2 3 4 5 6
25. Have you felt that it is not fair that other women are thinner than you? 1 2 3 4 5 6
26. Have you vomited in order to feel thinner? 1 2 3 4 5 6
27. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)? 1 2 3 4 5 6
28. Have you worried about your flesh being dimply? 1 2 3 4 5 6
29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape? 1 2 3 4 5 6
30. Have you pinched areas of your body to see how much fat there is? 1 2 3 4 5 6
31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)? 1 2 3 4 5 6
32. Have you taken laxatives in order to feel thinner? 1 2 3 4 5 6
33. Have you been particularly self-conscious about your shape when in the company of other people? 1 2 3 4 5 6
34. Has worry about your shape made you feel you ought to exercise? 1 2 3 4 5 6

*Interaction Anxiousness Scale (Leary, 1993) Appendix C*

**Please rate yourself as follows:**

**1 = not at all characteristic of me**

**2 = slightly characteristic of me**

**3 = moderately characteristic of me**

**4 = very characteristic of me**

**5 = extremely characteristic of me**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. I often feel nervous in casual get-togethers.  | 1 | 2 | 3 | 4 | 5 |
| 2. I usually feel uncomfortable when I am in a group of people I don't know                   | 1 | 2 | 3 | 4 | 5 |
| 3. I am usually at ease when speaking to a member of the opposite sex                         | 1 | 2 | 3 | 4 | 5 |
| 4. I get nervous when I must talk to a lecturer or boss                                       | 1 | 2 | 3 | 4 | 5 |
| 5. Parties often make me feel anxious and uncomfortable.                                      | 1 | 2 | 3 | 4 | 5 |
| 6. I am probably less shy in social interactions than most people                             | 1 | 2 | 3 | 4 | 5 |
| 7. I sometimes feel tense when talking to people of my own sex if I don't know them very well | 1 | 2 | 3 | 4 | 5 |
| 8. I would be nervous if I was being interviewed for a job.                                   | 1 | 2 | 3 | 4 | 5 |
| 9. I wish I had more confidence in social situations  | 1 | 2 | 3 | 4 | 5 |
| 10. I seldom feel anxious in social situations  | 1 | 2 | 3 | 4 | 5 |

11. In general, I am a shy person **1 2 3 4 5**
12. I often feel nervous when talking to an attractive member of the opposite sex. **1 2 3 4 5**
13. I often feel nervous when calling someone I don't know very well on the telephone. **1 2 3 4 5**
14. I get nervous when I speak to someone in a position of authority. **1 2 3 4 5**
15. I usually feel relaxed around other people, even people who are quite different from myself. **1 2 3 4 5**

*Revised Feelings of Inadequacy Scale (Fleming & Courtney, 1984) Appendix D*

Please rate yourself as follows by circling the number that you feel is most appropriate to you:

**1 = very often**OR **very confident**

**2 = fairly often**OR **fairly confident**

**3 = sometimes**OR **slightly confident**

**4 = once in a great while**OR **not very confident**

**5 = practically never**OR **not at all confident**

- |   |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| 1. How often do you feel inferior to most of the people you know?   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 2. How often do you have the feeling that there is nothing you can do well?                                     | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 3. When in a group of people, do you have trouble thinking of the right things to talk about?                   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 4. How often do you feel worried or bothered about what other people think of you?                              | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 5. In turning in a major assignment such as a term paper, how often do you feel you did an excellent job on it? | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 6. How confident are you that others see you as being physically appealing?                                     | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 7. Do you ever think that you are a worthless individual?   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 8. How much do you worry about how well you get along with other people?  | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 9. When you make an embarrassing mistake or have done something that  |          |          |          |          |          |

- makes you look foolish, how long does it take you to get over it? **1 2 3 4 5**
10. When you have to read an essay and understand it for a class assignment, how worried or concerned do you feel about it? **1 2 3 4 5**
11. Compared with classmates, how often do you feel you must study more than they do to get the same grades? **1 2 3 4 5**
12. Have you ever thought of yourself as physically uncoordinated? **1 2 3 4 5**
13. How confident do you feel that someday the people you know will look up to you and respect you? **1 2 3 4 5**
14. How often do you worry about criticisms that might be made of your work by your teacher or employer? **1 2 3 4 5**
15. Do you often feel uncomfortable meeting new people? **1 2 3 4 5**
16. When you have to write an argument to convince your teacher, who may disagree with your ideas, how concerned or worried do you feel about it? **1 2 3 4 5**
17. Have you ever felt ashamed of your physique or figure? **1 2 3 4 5**
18. Have you ever felt inferior to most other people in athletic ability? **1 2 3 4 5**
19. Do you ever feel so discouraged with yourself that you wonder whether you are a worthwhile person? **1 2 3 4 5**
20. Do you ever feel afraid or anxious when you are going into a room by yourself where other people have already gathered and are talking? **1 2 3 4 5**

21. How often do you worry whether other people like to be with you? **1 2 3 4 5**

22. How often do you have trouble expressing your ideas when you have to put them into writing as an assignment? **1 2 3 4 5**

23. Do you often feel that most of your friends or peers are more physically attractive than yourself? **1 2 3 4 5**

*Information Hand Out: Appendix E*

The Eating Disorder Association of Ireland

[www.bodywhys.ie](http://www.bodywhys.ie)

Lo call 1890 200 444

[www.aware.ie](http://www.aware.ie)

Lo call: 1890 303 302

Email: [wecanhelp@aware.ie](mailto:wecanhelp@aware.ie)

Samaritans

1850 60 90 90

Email: [jo@samaritans.org](mailto:jo@samaritans.org).