

**Social media and its associations with body satisfaction, exercise and eating habits on undergraduate students**

Isabelle O'Reilly

10326033

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Dublin Business School, School of Arts, Dublin.

Supervisor: Dr. Lee Richardson

Programme Leader: Dr. R. Reid

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Department of Psychology

Dublin Business School

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### **Abstract**

The present study aimed to investigate the differences, relationships and predictability of body image satisfaction, exercise, eating habits and social media. Participants consisted of 113 undergraduate students (45 male, 68 female) with ages ranging from 18-33 ( $M= 21.12$ ,  $SD= 1.81$ ). A quantitative survey design was chosen, with cross sectional and correlational components. Participants completed an online questionnaire containing four questionnaires including Bergen Social Media Usage Scale, Body Shape Questionnaire, Godin-Leisure Scale and the Adult Eating Behaviours Questionnaire. The analysis revealed males were found to have higher body image satisfaction than their female counterparts. There was a significant positive correlation between body image satisfaction and exercise, and between body image satisfaction and positive eating habits. Body image satisfaction was significantly positively correlated social media usage. Body image satisfaction was found to significantly predict social media usage.

## Introduction

It is difficult to believe that a little over a decade ago social media was in its early years and had not yet gained traction. While a couple of decades ago vast sums of money would be spent on phone calls, and months would be spent waiting for letters, this has all changed partially due to social media. Social media has completely changed the way in which people communicate with one another; it has erased geographical boundaries that were once present. It has not only changed the way in which people communicate, it has also changed what and how much information can be accessed. This may not always be a good thing, as being exposed to all this information can lead to unrealistic expectations and notions of what is the norm. Advertising in recent years has been portraying what the media believe to be the ideal in many different aspects of life, i.e. the ideal car, the ideal home, the ideal body type. The ideal body type is an aspect of advertising on social media that can have extremely harmful effects on the public. In recent years substantial levels of body dissatisfaction have been reported (Levine & Smolak, 2000). Research in the US suggests approximately 40% of adolescent girls are dissatisfied with their bodies (Presnell, Bearman, & Stice, 2004). Similarly amongst UK samples, 48% reported to be dissatisfied with their shape, with 22% reporting that they were too fat (Sands & Wardle, 2003), and these figures only increase with age, as 50% of 11-16 reported being dissatisfied (White & Halliwell, 2010). Although the vast majority of research has focused on females; the attention on male body image has seen a steady increase (Pope, Phillips and Olivardia, 2000). In a society, which places heavy emphasis on physical appearance, could the presence of social media be to blame for these recent increases? Research has shown convincing evidence that the unrealistic body image ideals displayed in the media can lead to body dissatisfaction (Grabe, Ward, & Hyde, 2008).

### The Media's portrayal of men and women

In recent decades the media has been the primary source of what the public see, in the past this content was conveyed through mediums such as television, newspapers and magazines, these forms are a slightly less prevalent due to the launch of the Internet. The media is now more reliant on the Internet and information technology for conveying its message to the public. The Internet has changed what and how much is seen; it is responsible for vast amounts of information. Social media is highly visual and interactive; many social media platforms are based on a currency of likes and followers. Sherman et al, (2016) conducted a study using a social media platform similar to the photo-sharing app Instagram, in which 32 adolescents between 11-16 were asked to take part. Upon receiving high numbers of likes on their photos, there was a high level of activity seen across a wide variety of regions of the brain. A part of the striatum (nucleus accumbens), which is part of the brain's reward circuitry, was especially active, this shows that likes from a social media platform translate to a level of achievement in the brain. This study also reported that when shown the exact same photo with a lot of likes to half the participants and a just a few likes to the other half, they were significantly more likely to like it themselves in the photo with more likes. Teens react differently to information when they believe many endorse it.

Social media networking is the primary way young people connect and communicate, it can be considered their main channel to the outside world. It has been previously reported that greater usage of sexually objectifying media may be associated with higher levels of self-objectification (Aubrey & Frisby, 2011; Baker, 2005). Social media allows its user to see the world through a filter rather than real life. It is largely responsible for what the public sees as the ideal man and

woman (McCabe et al., 2007). Many of the advertisements that use social media as a medium to convey their message put heavy emphasis on physical appearance and the importance of being considered physically attractive, this in turn puts pressure on men and women to conform to these unattainable standards that have been set. McCabe et al, (2007) reported that these advertisements might have unfavourable effects on both men and women, noting that women are more susceptible to these effects.

From a young age unattainable standards are constantly presented, beginning with every young girls beloved Barbie. An eating awareness campaign by Slayen (2011) constructed a life size Barbie according to her doll size measurements. The life size Barbie showed shocking dimensions, including an 18-inch waist. If this Barbie were a real person it was reported that she would walk on all fours, with a BMI of 16.24 which would be considered anorexic, putting her at high risk of osteoporosis, amenorrhea (not being able to menstruate) and low heart rate. In the 1940's the ideal for women was to have a large bust and small waist, at the time Marilyn Monroe was the pinnacle of sexiness and her measurements now would be ones that would be fat shamed. This quickly changed in the 1960s, curves were no longer important and the look to have was one that could be considered an emaciated look. Between the years of 1960 and 1980 research has shown that the female body shown in the media has become smaller and smaller (Grogan, 2008)

In the past there was not as much pressure on men as there was on women, but in recent years this has changed. As women are gaining financial power, which they did not have in the past, men now have to bring more to the table. In 2012 CNN (Strickland, 2012) reported 'in addition to being financially successful, they need to be well-groomed, in good shape, emotionally skilled in relationships and

the emphasis on looking good is just part of the bigger package- the stakes have been raised' (Stickland, 2012). Over centuries there has been a drastic change in what has been the ideal male body, in roman times 800 BC the ideal was considered to be a body that would now be considered overweight, this was the ideal at the time as it showed that the male had substantial means to feed himself. Recent empirical research shows a man's desire to increase muscularity (Morrison & Morrison, 2006). From an evolutionary perspective humans develop psychological mechanisms to find a potential mating partner who is reproductively fit (Cosmides & Tooby, 1992). For men their physique conveys information about their reproductive fitness, a male who is muscular, strong and large is deemed to have the most vigorous set of genes (Singh, 1995). Those who process these preferences are more successful in their reproductive goals. This places great emphasize on being physically fit and muscular. This importance has only increased in recent years, with popular films such as 'Rocky' and 'Rambo' having their protagonist as an extremely muscular man.

### Social Media

Since the launch of MySpace in 2003, as one of the world first social networking sites, they (Social networking sites) have only become more plentiful. Following MySpace, Facebook, YouTube, Instagram, Twitter and Snapchat have emerged. Millions of new people are joining every year; between 2012 and 2017 Facebook's users grew from 1 billion to 2 billion users. (Constine, 2017). Recent figures have shown that monthly rates for social networking sites are at an all-time high, with Facebook, YouTube, Instagram, Twitter and Snapchat being the leaders, with users' monthly presence at 2 billion, 1.5 billion, 700 million, 328 million and 255 million, respectively. These social media sites have completely changed the

way in which many people communicate, but it has also changed the amount and type of information people have access to. As there is now an abundance of information that one is exposed to, this does not mean all of the information is desired. Facebook, Instagram, Twitter, Youtube and Snapchat allow their users to show snippets of their lives, to their friends and followers; this exposure can lead to users comparing their lives to their peers, and subsequently, can have harmful effects. Media has been a dominant force in creating the ideal body perception of both male and female bodies; an increasingly thin ideal for women and muscular ideal for men. The ideal female figure depicted on social media generally consists of models; from the 1950s the size of models has become increasingly smaller. In the 1950s models were approximately 8% thinner than the average woman, this figure has risen to 23% thinner (Derenne, 2003). Excessive use of media can be detrimental to a person's body image satisfaction, Solomon et al., 2001 reported males and females judge their bodies in accordance to images seen on social media and from peers. The ideal man is often considered as having a muscular physique; bodies like this are often attributed to body builders or athletes. As a result of increased interest in the male body image, men's health magazines have become more common. These magazines promote increased awareness of men's health issues and offer definite ideas of how to shape the body into the ideal, most popular and most desirable physique (Jackson, Stevenson and Brooke, 2001). In looking through advertisements that have appeared in the media, they have always reinforced the idea that men and women should fit a certain standard. Research conducted by Krahe and Krause, (2010) on the influence of advertisements on women, reported women being 36% more likely to choose a diet snack after being presented with a thin model rather than a normal size model. The main difference now is the size of that standard, and the medium in which it is transferred.

### Social comparison theory

According to social comparison people have a propensity to evaluate and rate their abilities and traits (Festinger, 1954); this can become a challenge when trying to evaluate certain aspects of their lives as often there is no clear-cut measurement. In the absence of any such measurement, social comparison ensues by comparing their abilities and traits to those of others. Those whom people choose to compare themselves to vary depending on certain situations, but generally people compare themselves to those perceived to be similar. According to this theory there are two types of social comparison, a downward and an upward social comparison. A downward comparison is when an individual views the person they are comparing themselves to as less, or worse off, and this can lead to a boost in self esteem. Research has shown that individuals are not always unbiased when evaluating, they can sometimes self-enhance, and so this boost in self-esteem may be unwarranted (Von de Mortel, 2008). An upward social comparison is when a person compares himself or herself to someone they consider to be superior to them, and this can lead to negative feelings of depression and low self-esteem. Festinger (1954) believed within the area of abilities, people have a habit of comparing upwards, so that a person has a goal to aim for and a plan to achieve such outcomes. Festinger (1954) was the first to coin the term social comparison, but the idea of comparing ourselves to others is not a new one. The classic conformity study by Asch (1952) in which participants purposely gave incorrect answers, and in turn they evaluated their own perception, second-guessing themselves and often altering their answers to conform to the social group. Theories suggest that social comparison is one of several processes by which individuals make assumptions about their own level of

physical attractiveness; this can result in body satisfaction issues. In particular when women compare themselves to media images, which present an unattainable thin ideal, it is likely they will develop dissatisfaction with their own bodies (Shaw & Waller, 1995)

### Cultivation Theory

Cultivation theory (Gerbner, 1998) suggests that media effects develop over time through constant viewing and interaction. Cultivation theory is defined as “the independent contributions television viewing makes conceptions of social reality” (Gerbner, 1998). Gerner’s research investigated whether heavy television viewers were more likely to perceive the real world in accordance to what they had been presented with on TV. While TV will not predict what a person will do after watching, rather it posits a connection between what if viewed and real life. Additionally, Morgan and Shanahan noted that TV viewers often look for programs that reinforce their existing beliefs, in turn strengthening these attitudes (Morgan & Shanahan, 2010). It is important to note that cultivation theory does not create attitudes, but serves as a medium to reinforce them (Shrum, 2009). Shrum noted that the more ‘thin ideal’ images women are exposed to, the more accessible they become. In addition, the positive connotation that is associated with the thin-ideal may also become more accessible. Contrastingly, the more negatives associated with overweight people that are observed, the more retrievable they may be, augmenting the sense of importance of maintaining a thin body shape. These associations may serve to enforce social attitudes regarding weight and its social implications- i.e. being thin is good, being overweight is bad. Women who are exposed to thin ideal television have displayed higher body dissatisfaction and express a desire to lose weight (Van den Bulck, 2000). Similarly, Myers and Biocca

(1992) noted that body dissatisfaction is related to cultivation effects and it may take only thirty minutes of TV viewing for this effect on perceived body shape. However, some researchers have found evidence that contradicts the general definition, which is given to cultivation theory. Eisend and Moller (1997) observed that body dissatisfaction is affected by the amount of total television viewing, but by way of affecting the viewers perception of themselves, rather than changing their view of reality.

### Body image satisfaction

Body image has been defined as the internal representation of your own external appearance, and is your own perception of your own body (Thompson and Stice, 2001). It may also be defined as the attitudes, emotions, perceptions and reactions an individual has to her or his own body. Body satisfaction is often measured by asking a person to rate their current body compared to their ideal shape; similar to social comparison theory, the difference in these two is the amount of body dissatisfaction (McCabe et al, 2007). One of the most empirically supported theories is the sociocultural model, which emphasizes slimness in women (Cusumano & Thompson, 1997). The main factor in this model is the media's portrayal of thinness being the ideal female figure (Waller et al., 1992). Research has shown that body image dissatisfaction can lead to a number of health problems, including low self esteem, disordered eating and depression. Body image satisfaction is considered a predicting and maintaining factor of disordered eating (Fairburn, Cooper & Shafran, 2003; Strice, Marti & Duran, 2011). Body image is closely related to psychological health. A person can be either satisfied with their body or dissatisfied. Body dissatisfaction is largely based on the individual's negative feelings of their body, which are often determined by social

experiences such as media images (Grogan, 1998). Body dissatisfaction has become a major concern in recent years in both genders, particularly in females. Previous research suggests females are more likely to want to be thinner or remain the same, rather than to be heavier (Silberstein et al., 1988; Shea & Prichard, 2007). Results yielded by McCabe and Ricciardelli (2001) found that media was perceived to be more influential on girls than boys. Similarly McCabe and Ricciardelli (2005) found adolescent girl reported pressure from the media to lose weight, while the opposite was found for adolescent boys with them reporting pressure to gain muscle from the media. Groesz et al (2002) conducted a meta analysis of 25 studies, which showed that in women, body image was significantly more negative after viewing images of thin women, compared to after viewing images of average or plus size women or inanimate objects. Grabe et al (2005) in a Meta analysis have shown the relationship between media and poor body image, it only stands to reason that this has not changed, and may have worsened as social media has allowed images to be increasingly more accessible.

### Exercising habits

Exercise is known to have a significant positive impact in relation to physical and mental wellbeing (Singer, Hauenblas & Janelle, 2001). These include, increased body image satisfaction (Strelan, Mehaffey & Tiggemann, 2003; Hausenblas & Fallon, 2006), higher levels of self esteem (Prichard & Tiggemann, 2005) and decreased depression (McAuley, Pena & Jerome, 2011). While these benefits have been widely supported, there have been recent reports that not all people are reaping these benefits. There has been a noted decrease in body image satisfaction and increase in disordered eating in people who exercise for appearance reasons (Boepple et al., 2016). Studies have shown that men are more

likely to exercise for fitness and health reasons (Markland & Hardy, 1993), in comparison to women who have been shown to exercise for motives associated with appearance, such as weight loss (McDonald & Thompson, 1992; Prichard & Tiggemann, 2005; Tiggemann & Williamson, 2000). Studies conducted by Furnham, Badmin and Sneade (2002) reported that when a person has specific reasons to exercise, this correlated with low self esteem and disordered eating habits, regardless of gender. More recent studies have similar results Brudzynski and Ebben, (2010) reported 37.8% of participants reporting body image as a reason for exercising. This study also identified negative body image as the prime motivator for exercise participation, a further breakdown showed 28% of participants increasing their exercise when they felt overweight.

### Eating habits

'Nothing tastes as good as skinny feels' a quote famously given by the supermodel of the 90's Kate Moss, this quote received wide criticism from the public. The 'curvy pin up' look that was so prevalent in models of the 50's has now been taken over by a new breed of waif-like models and a new unrealistic figure to attain. Paxton et al (1991) presented a survey of male and female students in which it was reported that body dissatisfaction and weight loss behaviours were closely related, and that females were significantly more dissatisfied with their bodies than males. Similarly, Edman et al. (2005) reported females are at a higher risk of disordered eating. A study conducted by Anschutz et al (2009) in which 110 women were shown a film with commercial breaks, using less thin models, thin models and neutral commercials. During the film, participants were able to freely eat snack food. Interestingly, women reported a more negative mood and ate less after being exposed to the less thin models than the thin models. This could be due

to the negative connotations around being overweight. Neumpark et al (2003) reported that body weight concerns had a strong correlation with unhealthy weight loss behaviours. Results from Li et al., (2010) reported higher levels of restrictive eating habits in undergraduates following viewing online profiles of successful peers. More recent reports from Holland and Tiggemann (2016) report a correlation between social media usage and eating concerns. In 2007 a survey conducted regarding body image revealed that over 60% of women were dieting in order to achieve their perfect body image (McCabe, Butler and Watt, 2007).

### Aims

The aim of this study is to investigate whether social media has an influence on body image satisfaction, exercising and eating habits in undergraduate students. It will also investigate if there is a difference in body image satisfaction between male and female students. This study's main focus is on the unrealistic and unattainable body ideals, which are relayed through various forms of social media, and to what extent the dependent variables correlate to each other and their ability to predict social media usage.

### Hypotheses

1. There will be a significant difference in body image satisfaction between males and females.
2. There will be a significant difference in exercising habits between males and females.
3. There will be a significant difference in positive eating habits between males and females.

4. There will be a significant difference in negative eating habits between males and females.
5. There will be a significant positive correlation between body image satisfaction and exercising habits.
6. There will be a significant positive correlation between body image satisfaction and positive eating habits.
7. There will be a significant negative correlation between body image dissatisfaction and negative eating habits.
8. There will be a significant positive correlation between body image satisfaction and social media usage.
9. Body image satisfaction, exercising and eating habits will predict social media usage.

## **Methodology**

This section will provide an overview of the methodology used in this study.

### Participants:

A total of 113 participants volunteered in this study, all were undergraduate students. Of these students, 45 were male and 68 were female. Any student over the age of 18 years and an undergraduate student were welcome to participate. The age range of the participants was 18-33, with mean age of (M= 21.12) and a standard deviation of (SD= 1.81). Participation in this study was completely voluntary; there were no monetary rewards or course credits given. The surveys were posted online using Google Docs and the URL link was attached to social networking sites, posted on Facebook university groups and messaged directly to students.

### Research Design:

All participants were asked to complete an online questionnaire of five measures, including a cover page (see Appendix 1), which explained the nature of the study and some instructions. A survey design was used for this study, which was comprised of cross sectional and correlational components. The independent variable was social media and the dependent variables investigated were body image satisfaction, exercising habits, and positive and negative eating habits.

### Materials:

All participants were required to answer a questionnaire relating to social media, body image satisfaction, eating and exercising habits. Initially the participants answered three demographic questions, these included gender, age

and whether they were an undergraduate student or not (see Appendix 2). Following this the participants were asked to self report their usage of social media, their body image satisfaction, their attitudes towards eating and exercising habits. The scales used for the questionnaire have been well validated in previous research therefore can be considered a reliable measure. The measures used are as follows:

**The Bergen Social Media Addiction Scale (BSMAS)** (Andreasson et al., 2017)

This measure is used to investigate the level at which one is addicted to social media (see Appendix 3). This questionnaire has a total of six questions, all with regards to experiences in the past year, in which the participants rate on a 5-point Likert scale (1- Very rarely; 5- Very Often) (e.g., “How often during the last year have you felt an urge to use social media more and more?”). The items correspond with diagnostic addiction criteria (American Psychiatric Association, 1994) Andreassen, C., Pallesen, S. and Griffiths, M. (2017). In order to get a total for this measure, the items are summed together, and a higher total would indicate a higher social media usage. It has been stated that if a person answers often or very often to more than four questions, they are addicted to social media. This means any score above 16 is considered addiction to social media. The Bergen Social Media Addiction Scale is a modified version of the previously validated Bergen Facebook addiction scale (BFAS; Andreassen et al., 2012). The modification is in order of inclusivity of all social media being defined as ‘Facebook, twitter, instagram and the like’ in its instructions. The scale has shown good psychometric properties and has been translated into many different languages (Andreassen et al., 2012, 2013; Wang, Ho, Chan, Tse, 2015).

**Body Shape Questionnaire -16 item version** (Cooper et al., 1987)

The original 34-item Body Shape Questionnaire (BSQ34) is a self-reporting instrument, designed to measure concerns about body shape and weight. This has been adapted to the Body Shape Questionnaire 16-item version ("BSQ-16", see Appendix 4), as the 34-item BSQ reportedly took 10 minutes to complete. In addition to the lengthy time to fill it out, reports from Dolan and Evans suggest that the 16-item version is more efficient. 'We suggest that use of these 16-item versions may be more efficient than the original BSQ where body disparagement is not the sole focus of a study' (Evans & Dolan, 1993). All questions concern experiences occurring over the past four weeks, in relation to the participants' feelings about their appearance. Answers are specified using a 6-point Likert scale (1- Never; 6-Always) (e.g. "Has feeling bored made you brood about your shape?"). The scoring of the BSQ-16 was completed using the equivalent cutting point for the 16-item short form, this is an adapted classification from the original full BSQ as there are fewer questions in the BSQ-16. This classification system is split into four categories 'no concern' (scoring less than 38) 'mild concern' (scoring between 38-51), 'moderate concern' (scoring between 52-66) and 'marked concern with shape' (scoring over 66) i.e. the higher the score, the higher the level of body dissatisfaction. Each of these classifications falls between specific scores from the BSQ, allowing results to be interpreted. Alternatively the scores could have been added up and multiplied by 34/16 to convert it into the BSQ34, which would give an approximate answer, but for convenience purposes the equivalent cutting point for the 16-item short version was used. This form would have had different probabilities, as there are different items, thus other rescaling rules based on empirical data, although none of which have been published for the BSQ. A Cronbach's alpha coefficient of 0.97 was reported for the BSQ34, and only when

the same Cronbach's alphas for the BSQ16 was only slightly lower of 0.93-0.96. A Cronbach's alpha coefficient for the BSQ 16 reported 0.93-0.96, which was found to be only slightly lower than that of the BSQ 34 reporting at 0.97. In a study conducted by Evans and Dolan (1993), 343 women were presented with two 16-item forms of the BSQ, which showed equivalence means and excellent internal consistency for both derivation and replication samples. The 34, 16, and 8 item versions showed equivalent convergent and discriminant validation against the Eating Attitudes Test (EAT-26) and other parameters.

### **Godin Leisure-Time Questionnaire** (Godin, G., Shephard, R. J.. 1997)

This questionnaire was used to assess the participants' levels of activity. The questionnaire is split into two questions (see Appendix 5), the first which requires the participant to comment how many times within the past week they have engaged in strenuous, moderate and mild exercise. The second question asks the participant to state how often they engage in regular activity, in which the answers are; Often, Sometimes, Never. For the first question, the score was calculated by  $(9 \times \text{Strenuous}) + (5 \times \text{Moderate}) + (3 \times \text{Light})$ , the total from this formula was the score in units. The scoring was as follows; active (scoring 24 units or more), moderately active (scoring between 14 and 23 units) and insufficiently active/sedentary (less than 14 units). Question two was based on asking the participant 'how often they work up a sweat', to which the answers were Often, Sometimes and Never. This question was not used in the data, as in retrospect it was decided that this question was subjective and would not give a genuine comparison. This scale has been validated by studies on 306 healthy adult volunteers (Godin & Shaphard, 1997). By the end of their study 'discriminant function analyses indicate that the selected questionnaire items were able to

discriminate the majority of fit from unfit people, and the majority of thin from fat subjects' Godin (1997). These scores from the discriminant functions were very stable over a two-week period. The scores corresponding to energy expenditure are obtained by multiplying activities performed for more than 15 minutes in a week with their coefficients.

### **Adult Eating Behaviour Questionnaire (Hunot et al., 2016)**

This scale examines appetitive traits and was used to assess the participants eating habits and attitudes (see Appendix 6). This measure was adapted from the Child Eating Behaviour Questionnaire (CEBQ) into a self-reporting measure used to assess the appetitive traits in adults. Participants were asked to read each statement and select the corresponding statement, which applied to them. This measure included questions such as "I love food" in which the participant was asked to give a rating on a corresponding scale. The inventory consisted of 35 items rated on a 5-point scale (1-Strongly Disagree; 5- Strongly Agree), 4 of which are reverse coded. Within the 35 items, they were split into sub-categories which are as follows; Hunger (H), Food responsiveness (FR), Emotional over eating (EOE), Enjoyment of food (EOF), Satiety responsiveness (SR), Emotional under eating (EUE), Food fussiness (FF) and Slow eating (SE). For this investigation two specific traits were chosen to represent positive and negative eating habits; enjoyment of food (positive) and emotional under eating (negative). The reliability of this measure was tested using two adult samples one year apart; using an online survey in 2013 and 2014. Both samples completed the AEBQ and self-reported their weight and height. PCA was used to derive 35 items for the AEBQ in sample one and confirmatory factor analysis was used to replicate the factor structure in sample 2. Reliability of the AEBQ was assessed used a

Cronbach's alpha and a two week test-retest in a subsample of 93 participants. Correlations between appetitive traits measured by the AEBQ and BMI were calculated. PCA and CFA results showed the AEBQ to be a reliable questionnaire (Cronbach's  $\alpha > 0.70$ ) measuring 8 appetitive traits similar to the CEBQ (Hunger, Food Responsiveness, Emotional Over-Eating, Enjoyment of Food, Satiety Responsiveness, Emotional Over-Eating, Enjoyment of Food, Satiety Responsiveness, Emotional Under-eating, Food Fussiness and Slowness in Eating. Overall, the AEBQ appears to be a reliable measure of appetitive traits in adults, which translates well from the validated child measure.

Procedure:

An online survey was conducted using Google Docs. By following the link provided on several social media platforms, the participants were brought to a coversheet. The coversheet explained the nature of the survey that the participation in the survey was completely voluntary, that the data the participant submitted would be completely anonymous, how the research was beneficial for the researcher's undergraduate degree and how it would be submitted for grading. Prior to beginning the survey the participant was asked to give their consent and by clicking into the survey this was assumed. Contact details of researcher and thesis supervisor were given. All participants were thanked upon submitting survey; also if any participants felt distress due to questions asked in the study, contact information for counselling organisations was provided for participants to contact (see Appendix 7). Replies were recorded and transferred to Microsoft Excel.

### Data Analysis

A number of areas were examined by the questionnaires; Social media, eating habits, exercising habits and body image satisfaction. All data was inputted into SPSS 24 and then analysed. Descriptive analyses were conducted first to attain an overall profile of the participants. A multivariate analysis of variance (MANOVA) was conducted to assess the gender differences across each dependent variable. A Pearson's product moment correlation was employed in order to investigate the relationship between dependent variables. Finally, a multiple regression was conducted in order to assess the predictability of social media when tested against the dependent variables.

## Results

The data collected consisted of participants' scores on the following measures; The Bergen Social Media Addiction Scale (BSMAS) (Andreasson et al., 2017), The Body Shape Questionnaire- 16 item version (BSQ16) (Cooper et al., 1987), The Godin Leisure-Time Questionnaire (Godin, G., Shephard, R. J., 1997), Adult Eating Behaviour Questionnaire (AEBQ) (Hunot et al., 2016). Statistical analysis of the data was completed using the current version of Statistical Package of Social Science (SPSS) software, which is 24.4. The results of the analysis are reported below.

### Hypotheses one, two, three and four:

A one-way between-groups multivariate analysis of variance (MANOVA) was conducted in order to investigate hypotheses one, two, three and four. The independent variable was gender and the dependant variables used were body image satisfaction, exercising habits, and positive and negative eating habits. Preliminary assumption testing was done to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity, with no serious violations noted. There was a statistically significant difference between males and females on the combined dependent variables:  $F(4, 108) = 12.75, p = .001, \text{Wilks' Lambda} = .68; \text{partial eta squared} = .32$ . When the results for the dependent variables were considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted alpha level of .0125, was body image satisfaction  $F(1, 113) = 5.73, p = .001, \text{partial eta squared} = .31$ . On inspection of the mean scores indicated that females reported higher scores, meaning lower levels of body image satisfaction ( $M = 61.22, SD = 15.49$ ) than males ( $M = 40.58, SD = 14.84$ ). Hence **hypothesis one** was supported.

Hypothesis two, three and four were not found to be significant, therefore were not supported.

Table 1 *Descriptive Statistics for MANOVA*

Variable	Gender	Mean	Standard Deviation
Body image satisfaction	Male	40.59	14.84
	Female	61.22	15.49
	Total	52.45	18.29
Exercise Habits	Male	45.06	19.60
	Female	49.65	25.78
	Total	47.70	23.37
Enjoyment of food	Male	3.26	.72
	Female	3.42	.81
	Total	3.35	.77
Emotional under-eating	Male	3.30	.55
	Female	3.31	.60
	Total	3.30	.58

Table 1 shows the mean scores of both male and female participants calculated on each measure, as well as the standard deviation. There is a notably large difference in body image satisfaction between males and females. A smaller difference can be seen for exercise habits, and a minute difference in enjoyment of food and emotional under eating.

Hypotheses five, six, seven and eight:

The relationships between body image satisfaction, exercise habits, and positive and negative eating habits were investigated using a Pearson Product-

moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity, with no serious violations noted. **Hypothesis five** asserted, “There will be a significant positive correlation between body image satisfaction and exercising habits”. There was a weak positive significant relationship between body image satisfaction (M=52.46, SD= 18.29) and exercise habits (M= 47.70, SD= 23.37) ( $r(23) = .0529$ ,  $p < 0.007$ ). This accounts for 5.3% of variance. Therefore hypothesis 5 is supported. **Hypothesis six** stated, “there will be a significant positive correlation between body image satisfaction and positive eating habits”. A positive significant relationship between body image satisfaction (M= 52.46, SD= 18.29) and positive eating habits (M=3.35, SD= .77) ( $r(23) = .0529$ ,  $p < .007$ ) was found. Thus hypothesis six was supported. There was no significance found for hypothesis seven, therefore it was not supported. **Hypothesis eight** stated, “there will be a significant positive relationship between body image satisfaction (M=52.46, SD= 18.29) and social media usage (M=21.12, SD= 4.79) ( $r(43) = 0.19$ ,  $p < .001$ ). This accounts for 19% of variance. Thus hypothesis eight was supported.

Table 2: *Correlation between Body Image Satisfaction, Social Media Usage, Exercise habits, Positive eating habits and Negative Eating Habits*

Variable	Body Satisfaction	Social Media	Exercise Habits	Positive Eating	Negative Eating
Body Satisfaction					
Exercise	.230**				
Social Media	.430**	.038			
Positive Eating	.232**	-.065	.159*		
Negative Eating	.150	-.041	.110	.307**	

\*\*Correlation is significant at the level 0.01 (1-tailed)

\*Correlation is significant at the level of 0.05

Hypothesis nine:

A multiple linear regression was calculated to predict social media usage based on body image satisfaction, exercise habits, and positive and negative eating habits. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity, no serious violations were noted. There was overall significance found for prediction of social media usage (See Table 3). A significant regression equation was found ( $F(4, 108) = 7.05$ ,  $p < 0.001$ ) with an  $R^2$  value of .18. Total variance explained by the model as a whole was 18%. It was found that body image satisfaction significantly predicted social media usage, ( $\beta = .12$ ,  $p = .001$ , 95% CI = .07, .17). Exercise habits, positive and negative eating habits did not predict social media usage. Overall hypothesis nine was supported.

Table 3: *Standard Multiple Regression of Body Image Satisfaction, Total Exercise Score, Positive Eating Habits and Negative Eating Habit Predicting Social Media Usage*

	<i>R</i>	<i>ajdR<sup>2</sup></i>	$\beta$	<i>p value</i>
<i>Model</i>	.21	.18		.001
Body Image Satisfaction			.12	.001
Total Exercise			-.03	.125
Enjoyment of Food			.239	.678
Emotional Under Eating			.213	.778

## Discussion

The objective of this study was to investigate the differences and relationships between the influences of social media on body image satisfaction, exercising and eating habits among male and female college students, and the ability of dependant variables to predict social media usage. The measures used included; Bergen Social Media Addiction Scale (Andreasson et al., 2017), which assessed participants' level of social media addiction and the Body Shape Questionnaire-16 (Cooper et al., 1987), which is a 16 item self-report measure of body image satisfaction. This investigation also included the Godin-Leisure Scale, which is used to assess a participant's level of activity and the Adult Eating Behaviours Questionnaire (Hunot et al., 2016) in order to assess participants eating patterns. The main findings of this research included; a significant difference in body image satisfaction and exercising in male and female participants. There was no significant difference found in positive and negative eating patterns in male and female. Significant positive relationships were found between body image satisfaction and social media usage, body image satisfaction and exercise, and no significant relationship between body image satisfaction and negative eating habits. Lastly, results found body image satisfaction, exercise, and positive and negative eating habits were a significant predictor of social media usage.

In support of hypothesis one which, stated there would be a difference in body image satisfaction in males and females, a statistically significant difference was found. Female students were found to have significantly higher scores (meaning lower satisfaction levels) on the BSQ16 when compared to their male counterparts. This is comparable to previous research (Tiggemann & Williamson, 2000; Prichard & Tiggemann, 2005; LePage & Crowther, 2010). In relation to low body image satisfaction, previous research suggests females were more likely to

wish to be thinner rather than remain the same or to be heavier (Silberstein et al., 1988; Shea & Prichard, 2007). It is not surprising there is a difference between males and females as their ideals as portrayed by the media differ. Males reported feelings of pressure to gain muscle, whereas females felt pressure to lose weight, additionally females were found to be more influenced by media than males (McCabe, Ricciardelli, 2003).

Hypothesis 2 stated that there would be a significant difference in the exercising habits of male and female students, there was no significant difference found. These results are in contrast to past research. Research suggests that these exercise differences are due to exercise motives, which were not accounted for in this study. Males have been shown to exercise for reasons related to competitiveness, fitness and for enjoyment (Markland & Hardy, 1993; Silberstein et al., 1988) whereas their female counterparts reported exercising for appearance related reasons such as weight loss or to maintain weight (McDonald & Thompson, 1992; Prichard & Tiggemann, 2005; Tiggemann & Williamson, 2000). This study would have benefitted from having exercise motives as component in addition to the exercise questionnaire.

Hypothesis three and four addressed different aspects of eating habits, with hypothesis three addressing positive eating habits and hypothesis four addressing negative eating habits. Hypothesis three stated that there would be a significant difference in the positive eating attitudes of males and females, this was hypothesis was not supported. This is contrary to previous research, which would suggest males have a better attitude towards eating, and females demonstrate higher levels of disordered eating (Pritchard, 2008). Similarly, for hypothesis four, which found there to be no difference in negative eating habits between males and females. This was interesting as past research suggested females are at a higher

risk of disordered eating (Edman et al., 2005), which could be due to the differences in ideal physique that is presented to males and females. For males the ideal is considered tall, muscular and mesomorphic (Waller-Loland, 1998), whereas for females thinness is the ideal figure (Waller et al., 1994). Overall it was surprising that there were no differences found for hypotheses three and four.

Hypothesis five presented that there would be a significant relationship between body image satisfaction and exercising habits, this was found to be true. This result was consistent with past research, which has indicted body image satisfaction is a major contributor to exercise. Past research has demonstrated that those who exercise have a more positive body image than those who do not participate in exercise (Hasuenblas & Fallon, 2006). Exercise is known to have an increase on body satisfaction (Singer, Hausenblas & Janelle, 2001), this indicates that as exercise levels increase so does body image satisfaction, suggesting a relationship. Results of this study concur with past research.

Hypothesis six stated that there would be a positive relationship between body image satisfaction and positive eating habits, meaning the higher the body satisfaction levels, the less disordered the eating. This was found to be true and this result is consistent with past research which suggests that those who have lower body image satisfaction have higher levels of disordered eating (Paxton et al., 1991), therefore if a participant were to have a higher score in body image satisfaction it can be assumed they would score more highly in positive eating habits. In agreement with this research, it stands to reason there is a positive relationship between body image satisfaction and positive eating habits.

Hypothesis seven demonstrated no relationship between low body image satisfaction and negative eating habits. Previous research has noted body image dissatisfaction as being a predicting and maintaining factor of disordered eating

(Fairburn, Cooper, & Shafran; Strice, Marti, & Durant, 2011). Paxton et al., (1991) reported body dissatisfaction and weight loss behaviours were closely related, with females were significantly more dissatisfied. This is consistent with research conducted by McGuinness and Taylor, (2016) which reported women being more dissatisfied with their bodies than men, with the highest reports of body dissatisfaction and negative eating habits being in overweight women. Due to these studies it was assumed that levels of low body satisfaction could be linked with negative eating habits. It would have been interesting to investigate the relationship between exercise motives and negative eating, as previous literature suggests those who feel they have failed to attain their ideal shape by way of exercising are more likely to develop disordered eating attitudes.

Hypothesis eight presented that there would be a relationship between body image satisfaction and social media; meaning the more social media usage the lower body image satisfaction, this was found to be true. Solomon et al., 2001 reported both males and females have a predisposition to judge their bodies and images according to standards set by social media. Additionally females were found to be influenced more by media than males (McCabe, Ricciardelli, Morell, 2005). The media is largely responsible for what the public regards as the ideal man or woman (McCabe et al., 2007). In recent years this ideal has become smaller for women (Grogan, 2008) and increasingly muscular for men (McCabe and Ricciardelli, 2001). The medias influence has been clearly noted through their advertisements pressuring men and women to conform to certain expected standards (Krahe and Krause, 2010).

Hypothesis nine stated that body image satisfaction, exercise, and positive and negative eating habits would predict social media usage. There was overall significance for body image satisfaction, exercising, and positive and negative

eating habits in the ability to predict social media usage. Upon further examination, body image satisfaction was the only variable to predict social media usage. This is consistent with past research, which suggests lower body image satisfaction is a result of high levels of social media usage. Upward self-comparison can occur and result in low body image satisfaction, particularly in women (Shawn & Waller, 1995). Exercise was not found to predict social media usage, this result was surprising as the current generation are using technology and social media networks to both engage and track their exercise. Current social media sites allow a person to track their exercise, food intake and steps taken in a day. Naturally, as a person exercises more and wishes to track it, they will engage with these social media apps more. Therefore the rate at which a person is exercising will contribute to the prediction of their social media usage. The importance of exercise motives should be taken into account in future studies. Positive eating habits were not found to predict social media usage. Negative eating habits were not found to predict social media usage; this is contrary to previous literature. As reported by Holland and Tiggemann, (2016) there is a correlation between social media usage and eating concerns. Similarly Li et al., (2010) found there are high levels of restrictive eating in undergraduates who read online profiles of successful peers. It was surprising that there was no level of significance for this variable as past research would suggest social media usage can be predicted upon examining negative eating attitudes.

### *Strengths, Limitations and Future Research*

One of the main strengths of this study is convenience, as the questionnaires were all filled out online there was no need for classroom-to-classroom recruitment of volunteers. All data provided by participants was completely anonymous, as a result, they were more likely to be honest with their answers. A relatively large sample was used in the present study, as a larger sample size improves the power of the results.

The first limitation of this study is that it was carried out in a partial fulfilment of the requirements of an undergraduate degree. All measures and scales had to be approved by the Dublin Business School ethics committee. This presented a challenge when setting out this study, as all measures had to be non diagnostic which proved challenging when finding measures that were suitable to both the current study and the DBS ethics committee.

All of the participants in this sample were undergraduate students; due to this 99.6% of the participants were under the age of 25, so this specific group could not be compared to other age groups. Using a larger sample size, not specific to undergraduate students would have given more diverse results.

Time was a factor when choosing the measures for this study, in order to avoid participants attention waning due to lengthy questionnaires shorter versions were used e.g. the BSQ 34 item version to the BSQ 16 item version.

A major limitation of using the BSQ 16-item version was the way in which it was worded, the questions were more directed toward females e.g. 'Have you thought that your thighs, hips or bottom are too large for the rest of you?' this question would not be considered something that males are concerned with. Due to this, the results given in the BSQ16 section of the questionnaire may have not truly reflected the level of satisfaction/dissatisfaction of the male demographic. In

future research the use of the Body Parts Satisfaction Scale Revised would allow for participants to rate specific areas of their body rather than as an overall, also this measure is not gender specific. The use of the Figure Rating Scale (FRS) would allow for comparison between current and ideal body in relation to participants level of body satisfaction. Additionally, a future study would benefit from collecting participants BMI (Body Mass Index) which would allow evaluation of the discrepancy between current body and ideal body of participants. The current study would have benefitted from a component regarding their motives for exercising in addition to the Godin-Leisure Questionnaire, as much past research indicates motives are equally as important as the act of exercising.

### *Conclusion*

Throughout history there have been various factors, which affect body image satisfaction, exercising habits and eating habits including what effects they have on each other. Body image satisfaction has been found to be a major predictor in levels of social media usage. The relationships between body image satisfaction and social media usage can have damaging effects on both men and women.

The current study did support its first hypothesis 'there will be a significant difference in body image satisfaction between males and females', showing that females scored higher in the body image questionnaire meaning lower levels of satisfaction. This research did not support hypothesis two that 'there will be a significant difference in exercising habits between males and females' which shows that now males and females are in sync with regards to exercise, where in the past males would have been considered to exercise more. The current research did not support hypotheses three and four 'there will be a significant difference in positive eating habits for males and females' and 'there will be a significant difference in negative eating habits between males and females'. Therefore it has been proven that both positive and negative eating habits between males and females are similar, where in the past females have been more at risk of negative eating habits.

This research did not support hypothesis five 'there will be a positive correlation between body image satisfaction and exercising habits' which shows that there is no relationship between levels of body satisfaction and the amount of exercise taken. This research supported hypotheses six 'there will be a significant positive correlation between body image satisfaction, and positive eating habits', that the higher body image satisfaction the higher positive eating habits a person will have.

Hypothesis seven was not supported; it stated 'there will be a significant negative correlation between body image satisfaction and negative eating habits'. This means low body image satisfaction does not lead to an increase in negative eating habits. The current research supports hypothesis eight 'there will be a significant positive correlation between body image satisfaction and social media usage'. Thus showing that as levels of social media usage increase, there is a decrease in body image satisfaction.

Lastly, the current research supported the ninth hypothesis 'body image satisfaction, exercise habits and positive and negative eating habits predict social media usage' which found body image satisfaction to be the most powerful predictor in social media usage.

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## Appendices

### Appendix 1: Information Sheet

My name is Isabelle O'Reilly and I am conducting research in the Department of Psychology that explores attitudes to body image, eating and exercising habits in relation to social media. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password-protected computer.

**It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.**

Should you require any further information about the research, please contact Isabelle O'Reilly, [REDACTED]. My supervisor can be contacted at Lee Richardson [REDACTED]

Thank you for taking the time to complete this survey.

**Appendix 2: Demographic Questions**

1. How old are you? (In years) [ ]
2. Gender? [ ]
3. Are you an undergraduate student? [ ]

**Appendix 3: Bergen Social Media Usage Scale**

Instruction: Below you find some questions about your relationship to and use of social media (Facebook, Twitter, Instagram and the like). Number each question with the response which best describes you.

1. Very rarely
2. Rarely
3. Sometimes
4. Often
5. Very often

1. How often during the last year have you spent a lot of time thinking about social media or planned use of social media? [    ]
2. How often during the last year have you felt an urge to use social media more and more?                    [    ]
3. How often during the last year have you used social media in order to forget about personal problems?            [    ]
4. How often during the last year have you tried to cut down on the use of social media without success?                    [    ]
5. How often during the last year have you become restless or troubled if you have been prohibited from using social media? [    ]
6. How often during the last year have you used social media so much that it has had a negative impact on your job/studies? [    ]

#### **Appendix 4: Body Shape Questionnaire-16 item Version**

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

Never 1

Rarely 2

Sometimes 3

Often 4

Very often 5

Always 6

OVER THE PAST FOUR WEEKS:

1. Has feeling bored made you brood about your shape? [    ]
2. Have you thought that your thighs, hips or bottom are too large for the rest of you? [    ]
3. Have you worried about your flesh being not firm enough? [    ]
4. Have you felt so bad about your shape that you have cried? [    ]
5. Have you avoided running because your flesh might wobble? [    ]
6. Has being with thin women made you feel self-conscious about your shape?  
[    ]
7. Have you worried about your thighs spreading out when sitting down? [    ]
8. Has eating even a small amount of food made you feel fat ? [    ]
9. Have you avoided wearing clothes which make you particularly aware of the shape of your body? [    ]
10. Has eating sweets, cakes, or other high calorie food made you feel fat? [    ]

11. Have you felt ashamed of your body? [ ]
12. Has worry about your shape made you diet? [ ]
13. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)? [ ]
14. Have you felt that it is not fair that other men/women are thinner than you? [ ]
15. Have you worried about your flesh being dimply? [ ]
16. Has worry about your shape made you feel you ought to exercise? [ ]

### Appendix 5: Godin-Leisure Scale

1. During a typical **7-Day period** (a week), how many times on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write on each line the appropriate number)

**a) STRENUOUS EXERCISE (HEART BEATS RAPIDLY)**

(e.g., running, football, vigorous long distance cycling)

**Times Per Week**

\_\_\_\_\_

**b) MODERATE EXERCISE (NOT EXHAUSTING)**

(e.g., fast walking, baseball, and folk dancing)

**Times Per Week**

\_\_\_\_\_

**c) MILD EXERCISE (MINIMAL EFFORT)**

(e.g., yoga, bowling, golf)

**Times Per Week**

\_\_\_\_\_

2. During a typical **7-Day period** (a week), in your leisure time, how often do you engage in any regular activity **long enough to work up a sweat** (heart beats rapidly)?

OFTEN 1.

SOMETIMES 2.

NEVER/RARELY 3.

**Appendix 6: Adult Eating Behaviours Questionnaire**

Please read each statement and number each question with the response which best describes you.

**Part (a)**

Strongly disagree 1

Disagree Neither 2

Agree or disagree 3

Agree 4

Strongly agree 5

1. I love food [ ]
2. I often decide that I don't like a food, before tasting it [ ]
3. I enjoy eating [ ]
4. I look forward to mealtimes [ ]
5. I eat more when I'm annoyed [ ]
6. I often notice my stomach rumbling [ ]
7. I refuse new foods at first [ ]
8. I eat more when I'm worried [ ]
9. If I miss a meal I get irritable [ ]
10. I eat more when I'm upset [ ]
11. I often leave food on my plate at the end of a meal [ ]

12. I enjoy tasting new foods [ ]
13. I often feel hungry when I am with someone who is eating [ ]
14. I often finish my meals quickly [ ]
15. I eat less when I'm worried [ ]
16. I eat more when I'm anxious [ ]
17. Given the choice, I would eat most of the time [ ]

**Part (b)**

Strongly disagree 1

Disagree 2

Neither Agree or disagree 3

Agree 4

Strongly agree 5

18. I eat less when I'm angry [ ]
19. I am interested in tasting new food I haven't tasted before [ ]
20. I eat less when I'm upset [ ]
21. I eat more when I'm angry [ ]
22. I am always thinking about food [ ]
23. I often get full before my meal is finished [ ]
24. I enjoy a wide variety of foods [ ]
25. I am often last at finishing a meal [ ]

26. I eat more and more slowly during the course of a meal [ ]
27. I eat less when I'm annoyed [ ]
28. I often feel so hungry that I have to eat something right away [ ]
29. I eat slowly [ ]
30. I cannot eat a meal if I have had a snack just before [ ]
31. I get full up easily [ ]
32. I often feel hungry [ ]
33. When I see or smell food that I like, it makes me want to eat [ ]
34. If my meals are delayed I get light-headed [ ]
35. I eat less when I'm anxious [ ]

**Appendix 7****Debrief sheet**

Thank you for taking the time to complete this survey; your responses have been recorded.

If any issues have emerged as a result of completing this survey, please get in touch with one of the support groups below.

AWARE helpline: 01 611 7211

Bodywhys helpline: 1890 200 444

Samaritans helpline: 1890 200 091