Exercise and Eating habits of University Students in relation to their
Body Image and Life-Satisfaction

Marylouise Mc Closkey

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Supervisor: Dr Garry Prentice

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Department of Psychology
Dublin Business School
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1. Declaration

Declaration

‘I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.’

Signed: Marylouise Mc Closkey

Student Number: 10354853

Date: 12/03/2019
2. Acknowledgements

I would like to take this opportunity to thank my supervisor Dr Garry Prentice for his guidance and support throughout this project and everyone who participated in the survey for making this research possible. I would also like to acknowledge Mr Michael Nolan and Dr Rosie Reid for their patience in answering my questions no matter how silly they seemed. A huge thanks must go to my mum, grandad and boyfriend for their support and encouragement rallying me to push through. I would like to give big thanks to my dog Murphy for having the cutest face and best cuddles that helped me through some of the more stressful days.

I would also like to acknowledge my granny who was my biggest fan and now my guardian angel inspiring me to chase my dreams.
3. Abstract

The aim of this study was to investigate the relationship between the variables exercise, eating habits (emotional under and over eating), body esteem (weight, appearance, attribution) and life satisfaction between male and female university students. An online survey containing demographic questions and Godin’s Leisure Time Exercise Questionnaire, The Adult Eating Behaviour Questionnaire, The Body Esteem Scale for Adolescents and Adults and The Satisfaction with Life Scale was completed by 133 students. A quantitative, correlational and cross sectional design found a significant difference in body esteem between genders and a significant relationship between body esteem and life satisfaction. A significant relationship was also found between gender and emotional eating, with further analysis showing significances between body esteem and emotional under eating and gender and emotional over eating. This indicates a need for further research into body esteem and a correction of the administration of the exercise questionnaire which had no significant results.
4. Introduction

4.1 Background

For many students starting college can be an exciting time, yet there are many factors to daily college life which can present challenges. Some of these challenging factors were highlighted by the Irish times in a recent article. It concluded that financial costs such as rent, travel, food and socialising add a monetary pressure on students giving the need for many to hold down a part-time job in order to fund their way through college life (Guyett-Nicholson, 2017). In addition, university social life adds a pressure on students to fit in to this new environment and immerse themselves in trying to make friends in class or through clubs and societies which can take up free time outside of scheduled class hours (Guyett-Nicholson, 2017). This is all in addition to the pressures of keeping up with the workload, coping with assignment deadlines and upcoming exams (Guyett-Nicholson, 2017). This large variety of aspects to college life can make it difficult for students to maintain a balanced lifestyle and look after their health, both physically and mentally. Finding the balance between college, friends, family, work and looking after ‘you’ can often be easier said than done. The aim of this current study is to examine if the exercise habits and eating habits of male and female university students is affected by their body image and life satisfaction as they manoeuvre their way through the pressures associated with attending college. This review of literature will look more in depth at the areas of exercise habits, eating patterns such as emotional under and over eating, body image and self-esteem and life satisfaction between the sexes.

4.2 Exercise Habits, Perceived Barriers & Gender Differences

The amount of exercise a person gets is directly related to the overall well-being of that individual as physical exercise is known to improve mood, reduce stress and help prevent obesity (Eichorn, Bruner, Short, & Abraham, 2018). Barnett et al. (2014), state that the
college years are a crucial time for the development of positive and negative health behaviours. The health behaviours learned during these years have the potential to determine the exercise habits for the duration of that person’s life (Eichorn et al., 2018). When young people do not meet the recommended guidelines for exercise they are more at risk of developing chronic illness in later life such as cardiac failure and diabetes as well as being at a higher risk for developing substance abuse problems associated with substances such as alcohol, cigarettes or marijuana (Barnett et al., 2014).

In Ireland the recommended guidelines suggest that an adult between the ages of 18 and 64 should participate in at least 30 minutes a day of moderate activity for five days or a total of 150 minutes a week (Department of Health and Children, Health Service Executive, 2009). Moderate activity should increase a person’s breathing and heart rate, making them warm and slightly sweaty and can be accounted for in activities such as brisk walking, gardening or swimming. For further health benefits the HSE recommend increasing aerobic activity to 60 minutes of moderate activity for five days (Department of Health and Children, Health Service Executive, 2009). When participating in vigorous activities such as running, cycling or dancing which cause a person to breathe heavily, increase heart rate and sweat vigorously, it only takes half the time to obtain the health benefits when compared with moderate levels of physical activity (Department of Health and Children, Health Service Executive, 2009). A department of health survey which takes a representative sample of the Irish population over 15 years of age found that 65% of the sample was aware of the recommended guidelines. Of this sample 56% believed they undertook a sufficient amount of physical activity however it was identified that only 32% of the sample reached a sufficient level of exercise (Healthy Ireland Survey, 2016). This demonstrates how people can have a misleading perception of their own actions and that Irish people do not partake in a sufficient
amount of physical exercise. This current study will gather data on the low, moderate and vigorous physical activity units per week in a student sample.

In 2014 Barnett et al. found evidence of a steep decline in the level of participation in physical activity through adolescence and young adulthood with 49% of American college students surveyed not meeting national guidelines for exercise. Remaining healthy, having positive feelings about oneself and the amount of homework given were all contributing factors to how much an individual exercised (Barnett et al., 2014). This demonstrates a relationship between an individual’s personal attitudes about oneself and the amount they exercise. The present study will test to see if this applies to an Irish student sample.

A 2004 study by Silliman, Rodas-Fortier, & Neyman, examined the diet and exercise habits, including the perceived barriers of following a healthy lifestyle in 471 college students. They found college students to be under high levels of stress with ‘lack of time’ reported as the main reason for not eating well or exercising regularly. The study also found that men exercised more frequently and intensely than women, and that men were more confident with their body image when compared with their female counterparts (Silliman, et al., 2004). The results of this study interestingly point to a correlation between exercise habits and body image indicating higher body image levels may lead to more positive and frequent exercise habits. This current study will look at the relationship between exercise and eating habits as well as the effect of exercise on body self-esteem and general life satisfaction between male and female university students.

4.3 Eating Habits, Disordered Eating, Gender Differences & Body Image

Inadequate nutrition may have negative effects on a student’s health or academic success as the transition to college can often cause a significant change in diet (Abraham, Noriega, & Shin, 2018). For many going to college is a student’s first chance to have a higher
degree of freedom from parental control and for some an opportunity to live independently. Consequently, eating nutritional meals can become less of a priority due to new time restrictions, additional hours spent socialising and limited cooking skills (Abraham et al., 2018). Students have the choice whether to eat a healthy or an unhealthy meal and many tend to choose the quick and convenient option such as college canteens, vending machines or local fast food chains which have limited healthy options (Abraham et al., 2018). Approximately one in three college students are overweight or obese and it is common for the average student to gain 5kg during college (Bennett, Greene & Schwartz-Barcott, 2013). Students are more likely to decrease their healthy eating behaviours for increased sugar and alcohol consumption (Papadaki, Hondros & Kapsokefalou 2007), with lack of time being reported as one of the main reasons for unhealthy eating patterns (Silliman et al., 2004). Similar to exercise habits, eating habits influenced throughout the college years are likely to influence a person’s eating habits throughout the remainder of their life meaning it is vital that healthy behaviours are acquired during this period (Abraham et al., 2018). This current study will examine the unhealthy eating patterns of emotional under eating and emotional over eating between males and females in a student sample and its relationship with exercise units, level of body self-esteem and life satisfaction.

Eating disorders are a common cause that affects healthy eating habits in Ireland and across the world. There are approximately 1757 new cases of eating disorders occurring each year in the 10-49 age brackets and it is projected that an estimated 188,895 people in Ireland will experience an eating disorder at some point in their life (Statistics, 2018). In 2017 females accounted for 89% of eating disorder admissions in Irish hospitals compared with just 11% of males being affected (Statistics, 2018). While this suggests that disordered eating is more prevalent in females it may only be due to the refusal of males to acknowledge they have a problem with their eating habits. The most common eating disorders are anorexia,
bulimia and binge eating disorder. Anorexia occurs when a person has an extreme fear of gaining weight and to combat this fear restricts their food intake when they are already of a low weight causing the person to be seriously underweight (Anorexia, 2018). Binge eating disorder occurs when a person uses binging on food and overeating large amounts as a coping mechanism for underlying issues which can cause weight gain (Binge Eating Disorder, 2018), while a bulimic sufferer participates in binge eating followed by making oneself sick for the fear of gaining weight (Bulimia, 2018). These eating disorders leave sufferers inadequately nourished with a likelihood of serious health problems including death if it is continued over a prolonged period of time. While this study will not diagnose eating disorders it will test the emotional under eating and emotional over eating tendencies associated with eating disorders in the college students in the sample.

A qualitative study of male and female undergraduate students was conducted to capture how individuals cope with emotions by eating and found differences and similarities between males and females use of emotional over eating (Bennett et al., 2013). Females identified stress as the primary trigger for emotional over eating which was followed by high levels of guilt causing a dangerous cycle of the emotional over eating recurring due to the negative feelings of guilt associated with it. Meanwhile males were triggered by unpleasant feelings such as boredom or anxiety and used food to fill the void without experiencing guilt (Bennett et al., 2013). This shows differences between the sexes for participating in unhealthy eating habits and the role guilt can play in emotional over eating in women. Contrastingly Geliebter & Aversa (2003), found no difference in emotional eating between genders however when genders were combined they found that underweight individuals reported eating less than the normal and overweight categories during negative emotional states which was of a greater magnitude than their overeating during positive states contributing to their low body weight. While this current study does not examine the triggers between males and
females for disordered eating it does test for differences in eating behaviours between the sexes.

A study by O’Dea (2012) found that low self-esteem and body image present in female students in the control group were more at risk of developing eating disorders than the intervention students who had a higher level of perceived body appreciation. This suggests that body image is a contributing factor in the eating habits of a person. Additionally, Stice & Bearman (2001) conducted a longitudinal study to test whether body image and eating disturbances partially explained the increase in depressive symptoms observed in adolescent girls. Added stress was found in adolescent girls regarding the pressure to be thin and participate in dieting which caused them to partake in under eating health behaviours in order to not gain weight. Consequently these high levels of body dissatisfaction were prevalent amongst the young females which contributed to their elevated depression (Stice & Bearman, 2001). This shows how negatively a low body image can impact on the eating habits and mental health of young people, particularly with females and their likelihood to under eat. The aim of this current study is to test the under and over eating patterns between male and female university students and their body self-esteem level and to see if this affects how often they partake in exercise behaviour.

4.4 Body Image, Self-Esteem & Gender Differences

Body image encompasses one’s body related self-perceptions and self-attitudes including thoughts, beliefs and behaviours in relation to one’s own appearance (Cash, 2004). Body image is the mental image that is created about oneself yet it may or may not bear any resemblance to what other people actually see (Engeln, 2017). It is subject to distortion over time due to negative past experiences, the influences of parents and peer groups and internal elements of a person like mood and emotions. A person’s mental image can strongly
influence their health behaviours and this mental image is often the root of eating disorders and other conditions such as anxiety and depression (Engeln, 2017). Women have been found to be more likely to suffer from body image issues than men and consequently there is a higher rate of females diagnosed with eating disorders than their male counterparts (Stice & Bearman, 2001). Having a negative body image can affect a person in many ways such as their academic performance, relationships with themselves and others and overall quality of life (Engeln, 2017).

Body image is both internal and external as it is influenced by our own person and by society. The judgement a person makes about their own body image is influenced by at least 7 sets of factors including cognitive variables, attitudinal variables, the history of weight change, social and cultural norms, individual attitudes to weight and shape as well as individual biological variables (Slade, 1994). These variables are still relevant today as physical appearance has never before held as much societal importance or reflected perceived self-worth as much as at the present time (Live Life Get Active Australia, 2016). This may be due to the influences of the media and social media which in recent times set the standard for what is ‘too thin’ or ‘too fat’. The media is a platform containing projected views on how a person should look while social media is full of “perfect” images for people to compare themselves with which can cause feelings of inadequacy about one’s own looks and life. This becomes a breeding ground for discontent and with such strong societal scrutiny it is easy to begin feeling not good enough and suffer from a negative body image (Live Life Get Active Australia, 2016).

Males have been found to have higher body image satisfaction than their female counterparts when body image was examined alongside social media use suggesting females are easier influenced online (O’Reilly, 2018). This claim is corroborated by Silliman et al.
(2004) who also found men to be more confident with their body image. Significant positive correlations were also found between body image satisfaction and exercise, and body image satisfaction and positive eating habits (O’Reilly, 2018). This suggests that body image could be a predictive factor of a person’s motivations as to why they participate in healthy or unhealthy exercise and eating behaviours. People with lower levels of self-esteem are more likely to be discontented with their body shape/size regardless of age and by participating in a controlled educational intervention to improve self-esteem and self-image the students have a significantly lower drive for thinness due to the decreased importance of their physical appearance leaving them at a lower risk for developing an eating disorder (O’Dea, 2012).

Kostanski & Gullone (2007), support this claim with research showing perceived body image dissatisfaction arises from a complex interplay of factors including self-esteem and gender and how a more positive body image can be reinforced by teachers and family. This demonstrates a link between body image and self-esteem and is why this current study will examine body self-esteem and its influence across genders on the exercise and eating behaviours of students and its effect on life satisfaction.

4.5 Life Satisfaction, Health Behaviours & Body Image Satisfaction

Life satisfaction is defined as an evaluation of the conditions of your life, and a judgement based on balance to see if it measures up favourably against your standards or expectations (Prasoon & Chaturvedi, 2016). Life satisfaction is a major indicator of general well-being and gives an overall assessment of feeling and attitudes about one’s life at a particular point in time which can be either positive or negative (Prasoon & Chaturvedi, 2016). It is believed to be influenced by work, family and personality traits and is a summary of the degree to which a person defines the overall quality of their life as derived from a comparison of ones aspirations to one’s actual achievements (Prasoon & Chaturvedi, 2016).
The closer an individual is to their desires the higher life satisfaction they will have as this experience of positive emotions will dominate over the negative emotions (Prasoon & Chaturvedi, 2016).

The satisfaction with life scale assesses the satisfaction of people’s lives as a whole without breaking it down into domains such as health or finances, instead allowing the individual themselves to weight these domains however they choose. A cross cultural analysis of young adults ranging in ages from 17-30 years old from 21 countries including Europe and the USA found that life satisfaction was positively associated with physical exercise, eating fruit and limiting fat intake (Grant, Wardle & Steptoe, 2009). Life satisfaction is also considered a component of measuring adolescent weight management as it revealed the perceptions of overweight and underweight students, who had dieted to lose weight using vomiting, laxatives and diet pills and how this significantly related to their reduced life satisfaction (Valois, Zullig, Huebner & Drane, 2003). Perceptions of underweight and extreme worry over weight have been found to be significantly associated with dissatisfaction with life for both males and females however worry of being overweight and worry over binge eating behaviour were only significant for females with males being less likely to report extreme dieting behaviours (Zullig, Pun & Huebner, 2007). This suggests gender differences as to why there is dissatisfaction with life due to body image and eating behaviours and how a different intervention approach for each sex may be beneficial at combatting this. The result of these studies provides an understanding of life satisfaction and how it can be a predictive factor of negative and positive health behaviours influencing exercise habits, eating habits and dieting culture.

Further research in the area of life satisfaction also found that it is strongly linked to body image satisfaction. Frederick, Sandhu, Morse & Swami (2016) completed a national US
study and found satisfaction with life to be strongly linked to appearance and weight in both males and females. For women their satisfaction with their appearance was the third strongest predictor of overall life satisfaction while for men appearance satisfaction was the second strongest predictor of overall life satisfaction only behind satisfaction with financial stability (Frederick et al., 2016), demonstrating a strong relationship between life satisfaction and a person’s own feelings about their weight and appearance. The research above does suggest correlations between life satisfaction and health behaviours and life satisfaction and body image therefore this current study will test for correlations between these variables in an Irish student sample.

4.6 Rationale

Building upon previous research this current study will examine the relationships between the variables; exercise habits, eating habits, body image and life satisfaction between males and females in a student sample as the variety of aspects to college life can make it difficult for students to maintain a balanced lifestyle and look after their health, both physically and mentally (Guyett-Nicholson, 2017).

Previous research has found that the college years are a crucial time for the development of positive and negative health behaviours such as exercise habits and eating patterns which are carried with a person throughout their life (Barnett et al., 2014). The amount of exercise a person gets is directly related to their overall well-being (Eichorn et al., 2018), with over half of a sample of an Irish population sample thinking they undertook a sufficient amount of physical activity with results finding under a third of the sample actually did (Healthy Survey Ireland, 2016). People with more confidence and a higher body image satisfaction have been found to exercise more regularly and frequently than those with a lower body image satisfaction (Silliman et al., 2004).
Body image levels have been proven to differ between the sexes, showing higher levels of body image for males than their female counterparts with further tests showing positive correlations found between body image satisfaction and exercise and body image satisfaction and positive eating habits (O’Reilly, 2018). Similarly body image dissatisfaction is a contributing factor to unhealthy eating behaviours such as emotional under eating and emotional over eating (Bennett et al., 2013). Furthermore life satisfaction has been found to be a predictive factor of health behaviour including exercise and eating patterns while also having a strong link with body image satisfaction (Frederick et al., 2016).

It is hoped that by looking at exercise, eating habits, body esteem and life satisfaction together while testing the gender differences for the variables that this current study can help contribute to the research literature, yield information for further research and identify areas of physical and mental health in Irish university students in need of improvement to yield healthy and happy young people emerging ready for the working world.

4.7 Hypotheses

Based upon the previous research discussed above this current study will test the following five hypotheses:

1. There will be a significant difference between body self-esteem (weight, appearance, attribution) between males and females.
2. There will be a significant relationship between body self-esteem (weight, appearance, attribution) and life satisfaction.
3. There will be a significant relationship between eating habits (emotional under and over eating) and exercise.
4. There will be a significant effect of gender on exercise when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction.
5. There will be a significant effect of gender on emotional under and over eating when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction.
5. Methodology

5.1 Participants

The Participants used in this study were a mixture of full time and part time students studying at university level selected through convenience sampling. A link to the online survey was shared with the BA psychology full time Facebook group and the BA psychology part time Facebook group. The survey was also posted on Facebook for circulation for students to participate in the survey and share it with their own cohort of Facebook friends, generating a small snowball effect to the sample. One hundred and thirty three students completed the voluntary online survey (Male = 25, Female = 108). The sample showed an age range of 18 to 54 with participants choosing from four different age ranges, 18-24 (N = 118, 88.7%), 25-34 (N = 10, 7.5%), 35-44 (N = 4, 3%) and 44-54 (N = 1, 0.8%).

5.2 Design

A quantitative, correlational and cross sectional survey design was used for this study. An online questionnaire was used to explore the relationships between the variables exercise, eating habits (emotional under and over eating), body self-esteem (weight, appearance and attribution), life satisfaction and gender. Hypothesis 1 looks for differences between the dependent variable body self-esteem (weight, appearance, attribution) and the independent variable gender. Hypothesis 2 tests the differences between the dependent variables body self-esteem (weight, appearance, attribution) and life satisfaction while hypothesis 3 examines the differences between the dependent variables eating habits (emotional under and over eating) and exercise. Hypothesis 4 tests the relationship between the independent variable gender and the dependent variable exercise while controlling for the covariates body self-esteem (weight, appearance, attribution) and life satisfaction. Hypothesis 5 examines the relationship between the independent variable gender and the dependent variables emotional
under and over eating while controlling for the effect of the covariates body self-esteem (weight, appearance, attribution) and life satisfaction.

5.3 Materials

Materials consisted of an online survey gathering information about the participant’s gender, age range and ensuring they were a university student. These demographic questionnaires were followed by four self-administered questionnaires.

Godin’s Leisure Time Exercise Questionnaire (Godin & Shepard, 1997) is a 4 item measure of exercise which asks participants how many times per week do they partake in strenuous, moderate and mild levels of exercise and a further question asking if they exercise often, sometimes or never (see Appendix 9.3). An example of a question used in the study is as follows: “During a typical 7-day period (a week) how many times on average do you do the following kinds of exercise for more than 15 minutes during your free time? A) Strenuous exercise (heart beats rapidly) (e.g. running, jogging...)”. The total leisure activity score is calculated by multiplying strenuous exercise by 9, moderate exercise by 5, light exercise by 3 and adding these scores together to create the total score. Scores of 24 units or more are considered active, scores of 14-23 to be moderately active and those with less than a score of 14 to be insufficiently active/sedentary. Validity evidence of this scale proved the classification of respondents into active and sufficiently active using body fat percentage scores and exercise records (Amireault & Godin, 2015).

The Adult Eating Behaviour Questionnaire (Hunot et al., 2016) is a 35 item measure of eating habits and appetitive traits measured on a five point Likert scale, ranging from ‘strongly disagree’ to ‘strongly agree’ (see Appendix 9.4). Items 12, 14, 19 and 24 reverse scored and the scale has a range of scores from 35-175. Examples of test items include “I love food” and “I eat more when I’m upset”. This questionnaire has eight separate subscales
including emotional under eating (items 15, 18, 20, 27, 35) and emotional over eating (5, 8, 10, 16, 21) with both having a range of scores from 5-25. The reliability of this measure is validated by the negative association of body mass index (BMI) and food avoidance appetitive traits and the positive relationship between BMI and emotional overeating (Mallan, et al., 2017). Reliability for this measure in the current study for emotional under eating is Cronbach’s Alpha = .826 and Cronbach’s Alpha = .893 for emotional over eating, indicating an acceptable level of internal consistency reliability.

The Body Esteem Scale for Adolescents and Adults (Mendelson, Mendelson & White, 2001) is a 21 item measure for body esteem, measured on a five point scale, ranging from ‘never’ to ‘always’ (see Appendix 9.5). Negative items 4, 7, 9, 10, 12, 16 and 17 are reverse scored and added together with the remaining scores to give a total. The range of scores possible is from 21-105 for the full scale with the higher the overall score indicating a higher degree of body satisfaction. Examples of test items include “I am satisfied with my weight” and “I wish I looked better”. This scale has three separate subscales; weight, appearance and attribution. Weight consists of seven items (3, 4, 8, 10, 16, 18, and 19) with scores ranging from 7-35, measuring how satisfied someone is with their weight. Appearance consists of nine items (1, 6, 7, 9, 11, 13, 15, 17 and 21) with scores ranging from 9-45, measuring how satisfied someone is with their looks. Attribution has five items (2, 5, 12, 14, and 20) with scores ranging from 5-25, measuring to what degree one attributes others’ evaluation of their body and appearance. The subscales have high internal consistency shown by high correlations in a 3 month test-retest supporting the reliability of the measures (Mendelson, Mendelson & White, 2001). Reliability for this scale and each subscale all had acceptable levels of internal consistency reliability in this current study with Cronbach’s Alpha = .917 for the scale, Cronbach’s Alpha = .568 for weight, Cronbach’s Alpha = .907 for appearance and Cronbach’s Alpha = .663 for attribution.
The Satisfaction with Life Scale (Pavot & Diener, 1993) is a 5 item measure for how satisfied a person is with their life, measured on a seven point Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’ (See Appendix 9.6). The responses to the five statements are totalled; the higher the score indicates a higher satisfaction with life with scores ranging from 5 extremely dissatisfied to 35 extremely satisfied. Examples of a test item include “In most ways my life is close to my ideal”. The scale is available in several languages and is reliable in clinical settings as a compliment to other emotional well-being measures to detect changes in life satisfaction throughout the course of treatment showing the scales cross cultural and clinical validity (Pavot & Diener, 1993). Reliability for this scale in the current study indicated an acceptable level of internal consistency with Cronbach’s Alpha = .889.

5.4 Procedure

DBS ethical guidelines were followed for this study. The research proposal was reviewed by the DBS ethics committee and approved pending minor changes. The thesis supervisor approved the minor changes and reviewed the survey before its distribution. Upon approval a link to the online survey was then posted to the DBS BA psychology full and part time Facebook groups as well as being circulated on Facebook. An information sheet was provided at the beginning of the survey providing information to participants about the nature of the study and asking for informed consent. Participants were made aware they were under no obligation to complete the survey but if they did they would not have the right to withdraw as all responses would be completely anonymous. The survey took 5-10 minutes to complete and after submission participants were thanked and debriefed appropriately. Participants were made aware of their right to know the results of the study and were provided with helpline numbers encase any distress was caused by the survey (See Appendices for consent form,
survey and aftercare information). After a month enough responses were generated to close response acceptance of the link and move onto the analysis stage.

5.5 Data Analysis

After the survey response acceptance was closed the data was transferred from Google Forms to Excel Spreadsheets where the data was prepared for SPSS. Once prepared, the data was transferred to SPSS where it was recoded and computed appropriately. Descriptive statistics were run on the data followed by inferential statistics to test the hypotheses. An Independent Samples T-Test was run on the data to test hypothesis 1 while a Pearson’s r Correlation was run on hypotheses 2 and 3. An Analysis of Covariance (ANCOVA) was used to test hypothesis 4 and a Multivariate Analysis of Covariance (MANCOVA) to test hypothesis 5.
6. Results

6.1 Descriptive Statistics

The mean number of exercise units per week for a student is 41.3 units which indicate the students are active as a score of over 24 suggests this. However with a minimum value of 0 units per week and a maximum of 190 there is a large range of scores. The mode score of 0 suggests a large part of the sample is insufficiently active with a standard deviation from the mean of 29.2. The mean score for emotional under eating is 14.75 which indicates a medium score that is similarly seen in emotional over eating with a mean of 14.78. Body esteem total has a mean of 59.36 that indicates a medium level of body esteem which is also seen for the 3 subscales, body esteem weight M=20.45, body esteem appearance M=24.45 and body esteem attribution M=13.74. Life satisfaction has a mean score of 24.23 which indicates the student sample surveyed in this current study is slightly satisfied with their life (see Table 1).

Table 1 Descriptive Statistics of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>0</td>
<td>29.2</td>
<td>190</td>
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<td>190</td>
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<tr>
<td>Under Eating</td>
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<td>14</td>
<td>14</td>
<td>4.45</td>
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<td>15</td>
<td>5.22</td>
<td>20</td>
<td>5</td>
<td>25</td>
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<tr>
<td>Body Esteem Total</td>
<td>59.36</td>
<td>58.5</td>
<td>49</td>
<td>15.35</td>
<td>70</td>
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<td>Body Esteem Weight</td>
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<td>18</td>
<td>4.68</td>
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<td>31</td>
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<tr>
<td>Body Esteem Attribution</td>
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<td>11</td>
<td>2.77</td>
<td>13</td>
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<td>20</td>
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</tbody>
</table>
6.2 Inferential Statistics

Hypothesis 1

An independent samples t-test was carried out to test whether there is a significant difference between body self-esteem (weight, appearance, attribution) between males and females. Results found there was a statistically significant difference between the total body esteem levels of males (M=68.76, SD=15.71) and females (M=57.08, SD=14.43) (t(126)=3.57, p=.001, CI (95%) 5.2->18.16). Therefore the null hypothesis can be rejected.

Further analysis using an independent samples t-test found there was a statistically significant difference between the body esteem weight levels of males (M=23.26, SD=4.62) and females (M=19.76, SD=4.44) (t(129)=3.61, p<.001, CI (95%) 1.55->5.67). Therefore the null hypothesis can be rejected.

A statistically significant difference was also found between the body esteem appearance levels of males (M=28.72, SD=7.97) and females (M=23.44, SD=7.49) (t(128)=3.13, p=.002, CI (95%) 1.94->8.62). Therefore the null hypothesis can be rejected.

The independent samples t-test found no statistically significant difference between the body esteem attribution levels of males (M=12.84, SD=2.81) and females (M=13.95, SD=2.73) (t(129)=-1.82, p=.071, CI (95%) -2.32->.09). Therefore the null hypothesis can be accepted.
Hypothesis 2

A Pearson's correlation was used to test whether there is a significant relationship between body self-esteem (weight, appearance, attribution) and life satisfaction. A scatterplot was carried out to determine the slope of the relationship between body esteem and life satisfaction. The slope was positive with some clustering around the line and outliers shown (see Appendix 9.8).

A Pearson's correlation coefficient found that there was a moderate positive significant relationship between total body esteem (M=59.36, SD=15.35) and life satisfaction (M=24.23, SD=6.27) ($r(126)=.43$, $p<.001$). Therefore the null hypothesis is rejected. This relationship can account for 18.49% of variation of scores.

Further analysis found that there was a moderate positive significant relationship between body esteem weight (M=20.45, SD=6.27) and life satisfaction (M=24.23, SD=6.27) ($r(129)=.32$, $p<.001$). Therefore the null hypothesis is rejected. This relationship can account for 10.24% of variation of scores.

A Pearson's correlation coefficient also found that there was a moderate positive significant relationship between body esteem appearance (M=24.45, SD=7.84) and life satisfaction (M=24.23, SD=6.27) ($r(128)=.48$, $p<.001$). Therefore the null hypothesis is rejected. This relationship can account for 23.04% of variation of scores.

A Pearson's correlation coefficient found that there was no significant relationship between body esteem attribution (M=13.74, SD=2.77) and life satisfaction (M=24.23, SD=6.27) ($r(129)=.1$, $p=.253$). Therefore the null hypothesis is accepted.
Hypothesis 3

A Pearsons r correlation was carried out to test whether there is a significant relationship between eating habits (emotional under and over eating) and exercise. A scatterplot showed no signs of a relationship between exercise and emotional under eating or exercise and emotional over eating (see Appendix 9.9).

A Pearsons correlation coefficient found that there was no significant relationship between emotional under eating (M=14.75, SD=4.45) and total exercise units (M=41.3, SD=29.2) (r(117)=.12, p=.179). Therefore the null hypothesis is accepted.

A Pearsons correlation coefficient found that there was no significant relationship between emotional over eating (M=14.78, SD=5.22) and total exercise units (M=41.3, SD=29.2) (r(116)=.14, p=.124). Therefore the null hypothesis is accepted.

Hypothesis 4

A one way ANCOVA was conducted to test whether there is a significant effect of gender on exercise when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction, which had a non-significant result (F(1,109)=3.88, p=.052). The covariates body esteem (weight, appearance, attribution) and life satisfaction had no significant relationship with the dependent variable exercise.

Table 2 Exercise, Sex, Body Esteem (Weight, Appearance, Attribution) & Life Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1</td>
<td>2.20</td>
<td>.148</td>
<td>.019</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>1</td>
<td>.27</td>
<td>.605</td>
<td>.002</td>
</tr>
<tr>
<td>Body Esteem Total</td>
<td>1</td>
<td>.11</td>
<td>.743</td>
<td>.001</td>
</tr>
</tbody>
</table>
Hypothesis 5

A one way MANCOVA was conducted to test whether there is a significant effect of gender on emotional under and over eating when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction. There was a statistically significant difference between genders on the combined dependent variables; emotional under eating and emotional over eating, after controlling for body esteem (weight, appearance, attribution) and life satisfaction ($F(2,118)=3.77$, $p=.026$, Wilks’ Lambda=.940, Partial Eta Squared =.06) which indicates a small effect size. The covariate body esteem attribution had a positive significant moderate relationship with the dependent variable emotional under eating ($M=14.79$, $SD=4.54$) with a small effect size, Partial Eta Squared=.04, ($F(1,119)=4.44$, $p=.037$). There was also a moderate statistically significant relationship between males ($M=12.86$, $SD=1.01$, CI(95%) 10.85->14.87) and females ($M=15.19$, $SD=.48$, CI(95%)14.23->16.15) on emotional over eating with a small effect size, Partial Eta Squared=.04, ($F(1,119)=4.15$, $p=.044$).
7. Discussion

The purpose of this study was to examine the relationship between exercise habits, eating habits (emotional under eating, emotional over eating), body esteem (weight, appearance, attribution) and life satisfaction between male and female university students using four self-administered questionnaires and a set of demographic questions as part of an online survey. The following sections discuss the main findings of this study and how it relates to previous literature in the field followed by the strengths and weaknesses of this current research and future recommendations.

7.1 Summary of the Main Findings

Hypothesis 1

Hypothesis 1 predicted that there would be a significant difference between the body self-esteem (weight, appearance, attribution) levels between male and female students. Results found that there was a significant difference between the total body esteem, body esteem weight and body esteem appearance of males and females in the sample supporting previous research for these three variables. Conversely there was no significant difference found between body esteem attribution in males and females which does not support the hypothesis or previous findings.

The results indicate that total body esteem, weight and appearance levels are lower in females than in males contributing to a lower level of body image in female students. This supports previous findings by Stice & Bearman (2001) who found women to be more likely to suffer from body image issues than their male counterparts and the work of O’Reilly (2018) who found women to be less satisfied with their body image due to being more susceptible to outside influences such as what is portrayed in the media as the ideal body/look. Previous findings demonstrate people with lower levels of body esteem are more likely to be discontented with their body shape and size (O’Dea, 2012), which is supported in
the current study as the statistical significance of body esteem weight indicates displeasure with body shape and size that is found to be more prevalent in females than males.

In contrast to previous research body esteem attribution was not found to be statistically different between genders, this is not supported by the research of Kostanski & Gullone (2007) who found body image dissatisfaction arises from a complex interplay of esteem and gender. This could be due to the lower ratio of males to females in the current study which may not have given completely accurate results for body esteem attribution or perhaps Irish students care more about their weight and appearance and do not attribute this dissatisfaction with feelings other people may have about them to their body esteem which requires further research.

**Hypothesis 2**

Hypothesis 2 predicted there would be a statistically significant relationship between body self-esteem (weight, appearance attribution) and life satisfaction. Results found a moderate positive significant relationship between total body esteem, body esteem weight and body esteem appearance and life satisfaction in support of the hypothesis. Conversely no significant relationship was found between body esteem attribution and life satisfaction in this current study which does not support the hypothesis.

The results indicate that the higher level of total body esteem, body esteem weight and body esteem appearance a person has contributes to a higher degree of life satisfaction. This finding supports previous research which has found that a lower body image correlates with a lower quality of life satisfaction (Engeln, 2017) and worry over weight which is significantly associated with dissatisfaction with life (Zullig et al., 2007). The results of this current study are also in support of the work of Frederick et al. (2016), who found satisfaction with life to be strongly linked with appearance and weight in both males and females with
appearance being the third strongest predictor of life satisfaction for females and the second strongest predictor of life satisfaction for males.

While this previous research supports weight and appearance as a predictor of life satisfaction (Frederick et al., 2016), it did not find attribution to be a predictor of life satisfaction which this current study also found. This does not support the body esteem attribution hypothesis however it is similar to previous research. This current study has demonstrated a relationship with body esteem, weight and appearance in an Irish student sample that is not affected by body esteem attribution similar to previous findings.

**Hypothesis 3**

Hypothesis 3 predicted there would be a significant relationship between eating habits (emotional under eating, emotional over eating) and exercise. No significant relationship was found for emotional under eating, emotional over eating and exercise which does not support previous findings like those of Silliman et al. (2004), who found a relationship between not eating well and not exercising regularly. The current findings also do not support the research of O’Reilly (2018) who found predictive factors such as body image satisfaction as a motivation as to why a person participated in healthy or unhealthy exercise and eating behaviours.

The reason that the results of this current study do not support previous findings may be due to how participants answered Godin’s Leisure Time Exercise Questionnaire (Godin & Shepard, 1997). While the questionnaire was intended to gather information on how often in a 7 day period participants took part in light, moderate or strenuous exercise it is possible participants counted each time they moved as exercise as the mean number of exercise units per week was 41.3 with a range of 190 which is much higher than a score of 24 which indicates the person is sufficiently active. Students may have been confused with this questionnaire due to the high score of activity and range of scores that may have affected the
results as previous research indicates 68% of people are not sufficiently active (Department of Health and Children, Health Service Executive, 2009,) unless a major shift has taken place in the last 10 years towards a culture of over exercising. The most common number of exercise units given by respondents was 0 which also shows a sign of confusion in answering as almost everybody is active for at least 15 minutes a day even if it is light activity. Further research is needed in regards to exercise to determine whether the results in this current study have been skewed by confusion or if a major shift in exercise pattern has taken place.

**Hypothesis 4**

Hypothesis 4 predicted there would be a significant effect of gender on exercise when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction. Results found that there was no significant effect of gender on exercise when controlling for the covariates body self-esteem (weight, appearance, attribution) and life satisfaction and that the covariates had no significant relationship with exercise which did not support the hypothesis. Given previous research that found significant differences in body esteem and gender (Stice & Bearman, 2001) and a relationship between body esteem and life satisfaction (Engeln, 2017) it was hypothesised that these variables may also have an effect on exercise however this current study does not prove this.

Previous research found that having positive feelings about oneself contributed to how much a person exercised (Barnett et al., 2014) and that men exercised more frequently and intensely than women due to their higher body image satisfaction (Silliman et al., 2004). This relationship between personal attitudes about oneself and exercise and the differences in body image between genders and exercise were not found in this study which could be due to the lower ratio of male participants or the problems which may be related to the collection of data for the exercise questionnaire discussed above in hypothesis 3.
Hypothesis 5

Hypothesis 5 predicted there would be a significant effect of gender on emotional under and over eating when controlling for body self-esteem (weight, appearance, attribution) and life satisfaction. Results found a significant difference between genders on the combined dependent variables emotional under and over eating after controlling for body esteem (weight, appearance, attribution) and life satisfaction which had a small effect size. Further analysis showed that body esteem attribution had a positive significant moderate relationship with emotional under eating and a moderate significant relationship between genders on emotional over eating with females having a higher mean score than males for emotional over eating.

This current research supports previous findings which have demonstrated differences in eating habits between males and females with females more likely to suffer from disordered eating patterns than males (Statistics, 2018). O’Dea (2012) found low body esteem to contribute to disordered eating more than those who had a higher level of body esteem. This current study found that the higher a person attributed others’ evaluations of their body the more likely they were to under eat which demonstrates how a higher level of body esteem attribution could contribute to more healthy eating patterns for those prone to under eating.

While previous research has found similarities in males and females on patterns of emotional over eating it has found differences in the reasons why it occurs (Bennett et al., 2013). This current study has found a relationship between overeating for both males and females in the sample with females having a higher average of participating in over eating compared to males similar to previous research.
7.2 Strengths & Limitations

A strength of this study is the 133 participants who completed the survey in order to generate a medium effect size and improve the chances of finding a significant result. There were also strong ethical considerations in the making of the survey to inform participants of the nature of the study, to ensure participants were over 18 and inform students on their right to withdraw before submission as well as their right to know the results of the study. Encase any of the questions were upsetting to participants appropriate help options were outlined in the debrief sheet to avoid any harm to respondents (see Appendices). Cronbach’s Alpha reliability testing demonstrated an appropriate level of internal consistency for each scale and subscale which also improves the strength of this study. However there are a few limitations like the method of convenience sampling which had a lack of male respondents with only 25, compared to 108 female respondents. This may have given this study a false result by not showing significances in males due to a smaller sample and showing significances in females due to a larger sample. Another limitation of the study is the possibility of confusion when answering Godin’s Leisure Time Exercise Questionnaire (Godin & Shepard, 1997) due to the large range of scores and the high number of over active scores inconsistent with previous results as discussed in hypothesis 3.

7.3 Recommendations

This study provides a platform for future research to gather a more representative sample of the student population of Ireland and a closer spread of male and female respondents in order to gather more accurate results. In future the exercise questionnaire could be better explained as not every time you move but instead as each time you participate in exercise activity so as there is not such a wide range of answers that may be affecting the
result. This may be better explained as a hard copy questionnaire administered with instructions from a person rather than an online survey.

Given the results found in this study further research could be conducted qualitatively and quantitatively in the area of body esteem to test if there is enough work being done in schools and colleges to improve body appreciation as it has an effect on life satisfaction, emotional eating and is significantly lower in females than males. Further research may provide a need for the application of positive body esteem and body appreciation to be taught in schools and colleges across Ireland to protect the well-being of young people in this modern world where it is easy to compare thanks to the media and social media. Reinforcement of a more positive body image has been proven to improve self-esteem, increase positive eating and exercise habits and create a higher level of life satisfaction (Frederick et al., 2016) and may need to be taught to help people lead more satisfied lives.

7.4 Conclusion

This research has found differences in the body esteem levels of male and female university students, a relationship between body esteem and life satisfaction and a relationship between body esteem attribution and emotional under eating as well as a significant relationship between males and females on emotional over eating. No relationship was found between exercise and the other variables and it has been discussed that the exercise questionnaire may have been confusing for participants and should be better explained in future research. Future research should include a closer range of males to females and focus on the possible need for the application of body esteem classes to be taught in schools and colleges.
8. References


Amireault, S., & Godin, G. (2015). The Godin-Shephard leisure-time physical activity questionnaire: validity evidence supporting its use for classifying healthy adults into active and insufficiently active categories. *Perceptual and motor skills, 120*(2), 604-622. [https://doi.org/10.2466%2F03.27.PMS.120v19x7](https://doi.org/10.2466%2F03.27.PMS.120v19x7).


9. Appendices

9.1: Information Sheet

The Exercise and Eating habits of University Students in relation to their Body Image and life-satisfaction

My name is Marylouise Mc Closkey and I am conducting research in the Department of Psychology that explores exercise and eating habits of university students. This research is being conducted as part of my studies and will be submitted for examination and the results gathered may be presented at student congress.

You are invited to take part in this study and participation involves completing and submitting this anonymous online 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 data from the questionnaires will be recorded in electronic format and stored on a password protected USB before being incinerated.

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 me via email at xxxxxxxx. My supervisor can be contacted at xxxxxxxx.

Thank you for taking the time to complete this survey.
9.2: Survey Demographic Questions

1. What sex are you? Male □ Female □

2. Are you a University Student? Yes □ No □

3. Please tick appropriate age box
   18-24 □
   25-34 □
   35-44 □
   45-54 □
   55+ □
9.3 Godin’s Leisure Time Exercise Questionnaire

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

   a) STRENUEOUS EXERCISE (HEART BEATS RAPIDLY) (e.g., running, jogging, hockey, football, soccer, squash, basketball, judo, roller skating, vigorous swimming, vigorous long distance bicycling)

   b) MODERATE EXERCISE (NOT EXHAUSTING) __________ (e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, dancing)

   c) MILD EXERCISE (MINIMAL EFFORT) __________ (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, easy walking)

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)?

   1) OFTEN

   2) SOMETIMES

   3) NEVER/RARELY
9.4: The Adult Eating Behaviour Questionnaire

Please mark each statement with the corresponding answer

Part (a)

1 - Strongly disagree
2 - Disagree
3 - Neither agree nor disagree
4 - Agree 4
5 - Strongly agree

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)

1 - Strongly disagree
2 - Disagree
3 - Neither Agree or disagree
4 - Agree
5 - Strongly agree

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
Directions:

Indicate how often you agree with the following statements by clicking the appropriate number beside each statement.


1. I like what I look like in pictures.
2. Other people consider me good looking
3. I am proud of my body.
4. I am preoccupied with trying to change my body weight.
5. I think my appearance would help me get a job.
6. I like what I see when I look in the mirror.
7. There are lots of things I’d change about my looks if I could.
8. I am satisfied with my weight.
9. I wish I looked better
10. I wish I looked like someone else.
11. People my own age like my looks.
12. My looks upset me.
13. I’m as nice looking as most people.
15. I feel I weight the right amount for my height.
16. I feel ashamed of how I look.
17. My weight makes me unhappy.
18. My looks help me to get dates.
19. I worry about the way I look.
20. I think I have a good body.
21. I look as nice as I’d like to.
9.6: The Satisfaction with Life Scale (Pavot & Diener, 1993)

Below are five statements that you may agree or disagree with. Using the 1-7 scale below; indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

_____ In most ways my life is close to my ideal.
_____ The conditions of my life are excellent.
_____ I am satisfied with my life.
_____ So far I have gotten the important things I want in life.
_____ If I could live my life over, I would change almost nothing.
9.7: Debrief Sheet

Thank you for taking the time to complete this survey; your responses have been anonymously 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
- Marino Therapy Centre: 01 857 6901

You can also contact me at xxxxxxxxx or my supervisor on xxxxxxxx.

Thanks again for your participation!!
9.8: Scatterplot

Figure 2. Scatterplot of total body esteem and life satisfaction.
9.9: Scatterplots

Figure 3. Scatterplot of emotional under eating and total exercise units.

Figure 4. Scatterplot of emotional over eating and total exercise units.