Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli

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Dissertation submitted in partial fulfilment of the requirements of Cardiff Metropolitan University for the degree of Bachelor of Science
Declaration

DECLARATION,

I hereby declare that this dissertation is the result of my own independent investigation under the supervision of my tutor. The various sources to which I am indebted are clearly indicated. This dissertation has not been accepted in substance for any other degree, and is not being submitted concurrently for any other degree.

______________________________________,

xxxxx, Candidate
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Abstract

Literature suggests that individuals with eating disorders have an attentional bias to body related stimuli. Attentional bias also appears in females without eating disorders, but who have elevated levels of body dissatisfaction, however there is a limited amount of research, which also appears to report inconsistent findings. There is also an extensive amount of literature that reports media as having a negative impact on the body satisfaction of young women, with unrealistic portrayals of the thin ideal. Social media is one of the most common ways young women acquire information for social comparison with the more time spent looking at appearance related content, the higher their body dissatisfaction. Findings within social media and body dissatisfaction research is correlational, lacking experimental support. This study aimed to extend and improve upon existing literature by combining experimental research within social media and body dissatisfaction research. Female psychology students took part (n=52) in a dot probe task which included fat, thin and neutral stimuli. They then answered 2 questionnaires used to establish body dissatisfaction and social media consumption scores. Participants were grouped into high or low for each questionnaire score using a median split. The data was analysed using a 2x2x2 mixed ANOVA. Results found high social media consumers had a higher attentional bias to fat stimuli and, females low in both social media consumption and body dissatisfaction did not have a bias to fat body stimuli. Results added completely new findings to research. These findings were discussed in comparison to existing literature. Limitations were considered and direction for future research were suggested.
Table of Contents

Declaration ........................................................................................................................................... I
Acknowledgements ............................................................................................................................. II
Abstract ................................................................................................................................................ III
Table of contents ................................................................................................................................... IV
List of tables and figures ....................................................................................................................... VI

Chapter 1: Introduction
   1.1- Introduction ............................................................................................................................... 1
   1.2- Body Dissatisfaction (BD) ......................................................................................................... 1
   1.3- Attentional bias to weight and body related stimuli ................................................................. 2
   1.4- The media’s influence on body image .................................................................................... 4
   1.5- Social media’s influence on body image ................................................................................ 5
   1.6- Project rationale ....................................................................................................................... 8
   1.7- Aim ............................................................................................................................................ 8
   1.8- Hypothesis .................................................................................................................................. 8

Chapter 2: Methodology
   2.1- Ethics ......................................................................................................................................... 9
   2.2- Participants ............................................................................................................................... 9
   2.3- Design ....................................................................................................................................... 9
   2.4- Materials
      2.4.1- Body dissatisfaction measure ......................................................................................... 10
      2.4.2- Social media consumption measure .............................................................................. 10
      2.4.3- Attentional bias measure .............................................................................................. 10
   2.5- Procedure ................................................................................................................................ 11
   2.6- Method of analysis ................................................................................................................ 11
Chapter 3: Results..................................................................................................................................................12

Chapter 4: Discussion

4.1- Overview......................................................................................................................................................15
4.2- Findings.........................................................................................................................................................15
4.3- Considerations..............................................................................................................................................17
4.4- Future research.............................................................................................................................................19
4.5- Final conclusions..........................................................................................................................................20

5: References.......................................................................................................................................................21

6: Appendices

6.1- Information sheet...........................................................................................................................................30
6.2- Debrief sheet..................................................................................................................................................31
6.3- Social media consumption questionnaire...................................................................................................32
6.4- Dot probe word list.......................................................................................................................................35

7: Word count statement....................................................................................................................................36
List of tables and figures

Table 1: Demographics of the participant’s age and questionnaire scores.

Figure 1: A graph illustrating the interaction between media consumption and body stimuli on attentional bias.

Figure 2: Graphs to illustrate the three-way interaction between Body stimuli, Media consumption and Body dissatisfaction on attentional bias.
Chapter 1- Introduction.

1.1- Introduction.

This research project focuses on body dissatisfaction, social media consumption and attentional bias in a female sample and applies to the Health Psychology field of research. Much of the research into attentional bias and body dissatisfaction focuses on a clinical population (Green, McKenna, & Silva, 1994; Shafran, Lee, Cooper, Palmer, & Fairburn, 2007), however dissatisfaction with body image is a widespread problem in the lay population. There is little research exploring the attentional bias to body related cues in the lay population. This research study aims to add to this field of literature.

1.2- Body dissatisfaction (BD).

The research into body image has received growing interest within the 21st century (Grogan, 2016). Body image has been defined as being a “psychological construct that comprises of cognitions and feelings about one’s physical shape and appearance” (Brewer, 2011, pg 48). When an individual possesses negative feelings and evaluations of their body shape, size and weight, dissatisfaction can occur. Body dissatisfaction can be conceptualized in 2 ways; firstly, it can be a discrepancy between an individual’s own perception of their body size and their real body size; secondly, feelings of discontentment with their body shape and size (Ogden, 2003). Therefore, body dissatisfaction is likely to occur when there is a large gap between the body shape that the individual perceives themselves as having, compared to the body shape they would like to have (Brewer, 2011). Body dissatisfaction not only impacts the way in which individuals feel about themselves, but it can also impact their lives in terms of dietary habits and their concerns with body weight (Brewer, 2011). Approximately 70% of women will diet at some point in their lives (Ogden, 2003). Earlier research dating back to the 90’s found body dissatisfaction in women when asked to rate silhouettes. Women often preferred the thinner silhouettes, compared to silhouettes they rated as being most like themselves (Wardle, Bindra, Fairclough, & Westcombe, 1993). Also, many had dieted or taken part in weight loss programmes (Jeffery, Adlis, & Forster, 1991).

Body dissatisfaction is widely associated with eating disorders, depression, and low self-esteem (Coker & Abraham, 2014; Wiederman & Pryor, 2000). Findings suggest that dissatisfaction with body weight is higher in females who have an eating disorder in
comparison to those women who do not have an eating disorder (Coker & Abraham, 2014). Girls who score high on perfectionism scales and body dissatisfaction scales have been found to exhibit higher levels of eating disorder symptoms (Boone, Soenens, & Luyten, 2014).

Much of the research into body dissatisfaction has been conducted within the area of eating disorders and therefore has a strong focus on a clinical population. However, body dissatisfaction also appears in the non-clinical population (Coker & Abraham, 2014). It is also important to acknowledge that body dissatisfaction is not unique to women, and can occur regardless of gender, sexuality, religion, or culture. Nevertheless, research reports body dissatisfaction to be most common in women (Ogden, 2003). The pressure women face within the 21st century to achieve an unrealistic image has been found to have a negative effect on their psychological wellbeing. This includes a link to depression and anxiety (Frederick, Forbes, Grigorian, & Jarcho, 2007; Richard, Rohrmann, Lohse, & Eichholzer, 2016). It is clearly evident that body dissatisfaction is a concern in today’s society as the UK government have run several campaigns to promote positive body image and body confidence (HM Government, 2014; 2015). These campaigns target young females and aim to promote more realistic and diverse representations of females in advertising (HM Government, 2015).

1.3- Attentional bias to weight and body related stimuli.

Females with elevated levels of body dissatisfaction are more likely to pay more attention to cues and information that are associated with body shape. Research has suggested that individuals with eating disorders have a higher attentional bias to body related stimuli than those without eating disorders (Green, et al., 1994; Shafran, et al., 2007). Attentional bias (AB) is a discrete change in the direction in which a person’s attention is focused so that he/she becomes aware of a particular part or aspect of his/her stimulus environment” (Williams, Watts, MacLeod, & Mathews, 1997, pg. 73). Attentional bias is used to gain an understanding of how attentive a subject is to a certain stimulus (Dobson & Dozois, 2004) and is mainly used to gain information on the cognitive processes in eating disorder patients in a more indirect way. This is because self-reported data has been found to be unreliable due to patients deliberately distorting their responses (Faunce, 2002). Attentional bias is commonly measured by a modified ‘Stroop task’ (for example, food words in studies relating to eating disorders). The Stroop requires the individual to identify the colour that the emotional or neutral word is written in as quickly as possible, and those with an attentional bias to the stimuli presented will be delayed in colour naming (Faunce, 2002). Studies have found that individuals with anorexia
have a significant colour naming impairment to body-shape words, where non-anorexic controls do not (Green et al., 1994; Jones- Chesters, Monsell, & Cooper, 1998) which suggests that individuals with anorexia are more salient to body shape cues. However, research into attentional bias using the Stroop task has however faced much criticism. One of these problems is that within the Stroop, individuals are only attending to a single stimulus, rather than multiple stimuli, meaning that when interpreting results, it is unclear if the individual’s attention was drawn to the stimuli or, directed away from it (Faunce, 2002; Faunce, & Job, 2000).

Considering the problems within the Stroop task to measure attentional bias, a dot probe task has been created and is argued to be more superior and a more direct test of attentional bias than the Stroop task (Faunce, & Job, 2000). The dot probe task uses two stimuli/cues concurrently, one on the left and one on the right, which is then followed by a probe, in replacement of the stimuli and the participant must identify the location of the probe and the reaction time is recorded (Rieger et al., 1998). The dot probe task suggests that “participants are faster to respond to probes that appear in the same spatial location as the stimulus to which they are paying attention” (Shafran, et al., 2007, pg. 369). One of the first known studies to use a dot probe task, using a clinical population, found that those with eating disorders have a higher attentional bias to negative body shape words than to positive body shape words. This meant that both participants with anorexia and bulimia were faster at responding to the dot probe when it replaced a word that relates to a larger body rather than a thinner body (Rieger et al., 1998). These results reflect a tendency for those with eating disorders, to direct away from positive body stimuli and show direct attention to the negative body related stimuli (Rieger et al., 1998). Shafran and colleagues (2007) using a pictorial dot probe task (using images instead of words), found that individuals with eating disorders were significantly faster to respond to negative and neutral shape and weight stimuli, and were slower to react to positive stimuli. A study on a non-clinical, female sample also found that those with a higher body dissatisfaction score showed an attentional bias to shape and weight related words, in a dot probe task (Smith & Rieger, 2006).

However, there is a limited amount of research using these measures of attentional bias in the non-clinical population. Within the small amount of research in the non-clinical population, there appears to be inconsistent and conflicting findings in the attentional bias to shape and weight words. Glauert, Rhodes, Fink, & Grammer (2010), found females from the general population were faster at reacting to a probe when it was in replacement of a thin body
Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli.

This has also been further supported by Cho and Lee (2013) who found women with high body dissatisfaction showed longer and more frequent attention to thin bodies and were more avoidant to the fat bodies. However, research has also found those with a higher body dissatisfaction score, showed an attentional bias to negative shape and weight related words (Smith & Rieger, 2006). But, similar research has also observed no effect of body shape and weight stimuli on attention (Boon, Vogelzang, & Jansen, 2000). The inconsistent findings suggest that it is unclear if women in the general population who score high in body dissatisfaction focus their attention to fat stimuli, or rather prefer to avoid fat stimuli. A reason for inconsistent findings in the non-clinical population could be because researchers argue only those with eating disorders have dysfunctional ways of viewing their body (Cooper, 2005). An explanation for this can be found through using a Schema Theory (Cooper, 2005; Luck, Waller, Meyer, Ussher, & Lacey, 2005). Schema theories are made up of stable cognitive and core beliefs, combined with assumptions and thoughts, which have become distorted and inaccurate (Cooper, 2005; Schuck, Munsch, & Schneider, 2015). This suggests individuals attend to the stimuli that fits with the negative schema they have developed; meaning stimuli relating to body image and eating are easier to attend to (Schuck et al., 2015). This could explain why those with eating disorders have a higher attentional bias to body related stimuli than the non-clinical samples.

1.4- The media’s influence on body image

It is a common belief in the lay population and in academic research that the media can contribute to a women’s schema about their body image due to its influence on the thin-ideal (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2001; Grogan, 2016). Western society is surrounded by images within the media promoting thinness, there is plenty of research that seeks to understand the effect that this has on consumers in relation to their body satisfaction and eating behaviours (Slevec, & Tiggemann, 2011). One explanation for why the media may contribute to a woman’s body dissatisfaction can be understood by Festinger’s social comparison theory (1954), which suggests that individuals process societal information and messages by comparing themselves in order to establish the similarities and differences. Through doing this, the individual may use it to detect threats, learn from what they process or evaluate their own standing (Krayer, Ingledew, & Iphofen, 2008). Within social comparison theory, there appears to be three main types of appraisal: self-evaluation, self-improvement, and self-enhancement. Self-evaluation helps the individual to gather information about their
own standing in comparison to others. Self-improvement comparisons help the individual to learn how to improve the aspect they are comparing. Self-enhancement comparisons often arise in times of threat or uncertainty and is used to protect the self-esteem of the individual (Wood, 1989; Wood, Giordano-Beech, Taylor, Michela, & Gaus, 1994). From this people try to enhance their self-esteem by comparing with others, which can lead them to either feel more positively or negatively about themselves (Gibbons & Buunk, 1999).

Within the media, whether it be magazines, films, television or newspapers, images of thin women are predominantly used, particularly within advertisements, from clothing to household appliances such as vacuum cleaners (Ogden, 2003). When bigger women do appear within the media, there is frequently a link to them being fat, for example, a larger female comedian appearing on television might often make jokes about being fat (Ogden, 2003). Research into television exposure has found that music video viewing correlates to higher body image dissatisfaction in adolescents (Bell, Lawton, & Dittmar, 2007). When detecting trends within women’s fashion magazines between 1959-1999 it has been reported that between the 1980’s and 90’s the models used became increasingly thinner, and the frequency of full body images of these thinner models also increased (Sypeck, Gray, & Ahrens, 2004). However, in today’s media there appears to be campaigns and images in advertising using ‘real’ women, not celebrities or models. One company that launched a campaign using just real women is Dove Beauty. They promised on their “60 years of #RealBeauty” campaign to “always feature real women, never models” and promised that they would “portray women as they are in real life” further explaining that digital distortion and retouching tools are never used ("60 years of #RealBeauty", 2017). In October 2014, daytime television show ‘This Morning’ also launched a Real Women campaign with Gok Wan, where they banned models from their show and invited viewers to apply to join their fashion team and appear on the show as a model ("Gok’s real women", 2014). These media campaigns suggest that in today’s society and alongside the government campaigns, more is being done to try to divert away from unrealistic thin ideals.

1.5- Social media’s influence on body image.

Today, one of the most common ways in which we interact and acquire information for social comparison with others is through the internet (Lee, 2014). The internet has become the most common place for individuals to socialise, by using sites such as Facebook, Instagram, Twitter, and YouTube, on multiple platforms of technology such as smartphones, laptops, and tablets. Individuals build these platforms and have their very own ‘profile’ to communicate
quickly and instantly with the world (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). One of the most common places for this social interaction online is through social networking site Facebook (Lee, 2014). It is found that much of an individual’s time whilst on these social networking sites is reading what others do rather than posting content themselves (Pempek, Yermolayeva, & Calvert, 2009). However, this can be particularly problematic, particularly to the reader’s self-esteem as Facebook users are much more likely to post about good things rather than the bad things within their own lives and images are often edited and enhanced to present an idealized version of one’s self (Zhao, Grasmuck, & Martin, 2008). This, therefore, can give the reader a false concept of their lives and their own image, further resulting in the reader feeling more negatively about themselves when engaging in the social comparison (Lee, 2014; Marsh & Parker, 1984).

Since it has become so easy for the population to gain access the world of social media, it has helped individuals, particularly teenagers and young adults to structure their social, cognitive, and emotional development as well as providing them with the information about body image ideals (Williams & Ricciardelli, 2014). It appears that only recently, research into social media websites and their impact on body image has been conducted and, based on what is known from social comparison theory research, social media could be a great contributing factor as to why females may become dissatisfied with their body and develop eating disorders.

In fact, a small area of research has found social media does negatively affect the way a female feels about and perceives her body (Fardouly & Vartanian, 2015; Holland & Tiggemann, 2016; Meier & Gray, 2014; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). Those who are Facebook users have reported more concerns with their body image than those who do not use Facebook (Meier & Gray, 2014; Tiggemann & Slater, 2013). Also, the amount of time spent on Facebook in general, was also associated with having a higher body dissatisfaction (Fardouly & Vartanian, 2015). Social media exposure has a greater correlation with body dissatisfaction than magazine or television exposure (Tiggemann & Slater, 2013). But, there are some mixed findings about body dissatisfaction and general social media usage, as research finds that only exposure to certain aspects within the sites correlates to body dissatisfaction. Contrary to the belief that the greater the social media (Facebook) usage, the greater the body dissatisfaction, Fardouly and her colleagues found no effects of this exposure on body dissatisfaction (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015). Tiggemann and Miller (2010) found that the more appearance related content adolescent girls were exposed to
the greater their dissatisfaction with their weight and drive for thinness. Further supporting this, studies found general Facebook use was not related to body dissatisfaction (Kim & Chock, 2015), but only the time spent engaging in photo activity that correlated to body dissatisfaction (Meier & Gray, 2014). Not only has appearance exposure on these social media sites been found to impact females body satisfaction, it has also been found to correlate with their eating pathology, meaning that it can cause eating disorder symptoms (Bair, Kelly, Serdar, & Mazzeo, 2012).

However, the studies within this field have their limits as they do not contain experimental research. Holland and Tiggemann (2016) specifically stated in their recent review of this literature, that more experimental research is needed when studying social networking, and its relationship to body dissatisfaction. Much of this research also has a specific focus on Facebook as the main platform of social media in relation to body dissatisfaction in women (Fardouly et al., 2015; Fardouly & Vartanian, 2015; Kim & Chock, 2015; Meier & Gray, 2014; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). There is satisfactory justification for this, as it is understood that approximately 10 million new images are added to Facebook every hour (Mayer-Schonberger & Cukier, 2014). However, this area of literature contains little to no inclusion to the popular social networking site Instagram, within its research. One very recent study found that viewing images of both celebrities and peer images were significant predictors of body dissatisfaction when compared to a travel image control, and surprisingly, it was found that celebrity and peer images both predicted the same levels of body dissatisfaction (Brown & Tiggemann, 2016), this appears to be the only research into social media exposure and body dissatisfaction that contains experimental research. Instagram is a newer website/app within social media which launched in 2010, and its primary use is image sharing, where users can apply filters, and edit their image before posting it. With over 500 million active users (Instagram, 2016), it makes it the second most engaged networking site after Facebook; this engagement has grown by 416% in the past 2 years (Brandwatch & Smith, 2016). The massive growth in the use of Instagram over the past 2 years suggests a lot more research needs to be carried out into social media exposure and its impact on body dissatisfaction, with a keen focus on Instagram.
1.6 Project rationale.

The present study aims to add to existing literature, by including both experimental research and Instagram within the social media consumption measures. The study will use a visual dot probe task on a non-clinical population of female undergraduate students. This will measure their attentional bias to weight stimuli, which will then be followed by 2 self-report questionnaires to measure their body dissatisfaction and social media consumption.

Use of the visual dot probe task within this study will add an experimental component which needed in the correlational, body dissatisfaction and social media research, as highlighted by Holland and Tiggemann (2016). This will also provide an insight into the cognitive functioning within a non-clinical population, where findings have been inconsistent. The study secondly adds to gaps in the research by including Instagram as a measure when researching media consumption. The need for Instagram to feature in social media consumption is not only due to its growth in popularity but because the site is based solely on photos. The inclusion of this is important based on Meier and Gray’s (2014) findings that only time spent engaging in photo activity correlated with body dissatisfaction, and should therefore support and add to their findings.

1.7- Aim

The aim of this project is to establish whether there is an interaction between body dissatisfaction, social media consumption and attentional bias to body stimuli within a non-clinical female sample.

1.8- Hypothesis

1. Participants who have higher body dissatisfaction will have a higher attentional bias to body stimuli.

2. Participants who have a higher social media consumption will have a higher attentional bias to body stimuli.

3. Participants who score high in both body dissatisfaction and social media consumption will have a higher attentional bias to body stimuli.
Chapter 2- Methodology.

2.1 Ethics.

Cardiff Metropolitan University Ethics Panel approved ethics for this study in November 2016. There were several ethical considerations made; first of all, the true nature of study could not be revealed at the onset to participants. This was due to the potential that this could influence the task performance. A debrief sheet was created to be given to participants once they finished the study (Appendix 6.2). This contained their participant number and the date of their right to withdraw, along with the true meaning and background behind the study and links for further information and support. The second ethical decision made was due to the content within the study, individuals who have a history of any eating disorders were excluded from participation. This exclusion criteria was stated on the information sheet and consent form, as well as on the participant panel before they signed up.

2.2 Participants.

This study had an opportunity sample consisting of 52, female, undergraduate psychology students. Participants were recruited via Cardiff Metropolitan University’s SONA system, which is a participation panel for psychology students to acquire course credits in return for their participation in research. This population was used as research has suggested that 91% of 16-24 year olds are likely to engage in social networking (Office for National Statistics, 2016). Therefore, it was thought that most the participants would be engaging in social media.

2.3 Design.

The study is a quantitative mixed design containing 3 independent variables. The first was body dissatisfaction, measured using the EDI-2 (Garner, 1991). This was between subjects as participants were allocated to a high and low body dissatisfaction group, based on a median split. The second independent variable was social media consumption (Appendix 6.3), again this was between subjects as participants were grouped into high and low usage using a median split of the data. The third independent variable was within subjects, and was the body stimuli within the dot probe task (fat/thin).
The dependent variable was the attentional bias score which was measured in milliseconds (ms).

2.4 Materials.

2.4.1 Body dissatisfaction measure.

Two subscales of the EDI-2 (Garner, 1991) were used to measure body dissatisfaction. These subscales are Body Dissatisfaction (BD), which consists of 10 items. These consider the discontentment with overall body shape and size including buttocks, thighs, stomach, and hips. The second subscale used was Drive for Thinness (DT), which consists of 7 items that consider the desire to be thin. Fear of weight gain and dieting. Using Chronbach’s alpha using SPSS to test the reliability and internal consistency of the scale, it is found that the internal consistency of Body Dissatisfaction was .920 Drive for Thinness was .870. These illustrate that both scales were reliable.

2.4.2 Social media consumption measure.

The Facebook Questionnaire (FBQ) (Meier & Gray, 2014) was adapted by the researcher to include a measure of Instagram use (Appendix 3). This measure will be used to establish if the participant has a high or low consumption of social media. In questions 2, 4 and 35 participants indicated hourly usage of the internet, Facebook, and Instagram, these were scored using a 5-point Likert scale (0=Never/almost never, 5=More than 2-3 hours per day). Participants were also asked how often they ‘viewed’ certain aspects within the sites (questions: 24,25,26,2747,48,49) which was scored on a 4-point Likert scale (0=Almost never/ I don’t know, 4=Nearly every time I log on), participants were also given an extra score for having a Facebook and Instagram account. Only these questions were scored because, based on the findings of Meier and Gray (2014), because they found no significant correlations between overall Facebook interaction (posting and liking statuses, etc.) and body dissatisfaction but did find significant correlations in the participants ‘viewing’ activity and body dissatisfaction.

2.4.3 Attentional bias measure.

A visual dot probe task was used in the study to measure the participant’s attentional bias to fat and thin stimuli. The task was created using E-Prime 2 and included 10 practice trials followed by 74 trials of words that related to body shape and size as well as a neutral condition.
The participants viewed a black fixation point in the middle of the white screen for 1000ms to begin each trial. This was then followed by a body related word and a neutral word, randomly assigned to each side of the screen, which was shown for 500ms. This was then followed by 1 black dot to either the left or the right where the word was, again randomly assigned. Participants then had to identify the location of this dot probe using the ‘f’ key if it was on the left and the ‘j’ key if it was on the right. The time taken to identify the position of the probe was recorded. This was repeated for all 74 trials.

2.5 Procedure.

The study was carried out in a controlled, quiet environment in the university laboratory; participants were alone in the laboratory so should not have been distracted. Participants gave their informed consent before beginning the study by reading an information sheet about mood and media use and signing a consent form. They were also made aware that they could withdraw at any time. To begin the study, they completed the visual dot probe task, following that they moved onto the Body dissatisfaction questionnaire (EDI) and the Media consumption questionnaire. The study lasted approximately 18 minutes. Upon completion, they were given a debrief sheet informing them on the true background behind the study and were again reminded that they still had their right to withdraw. They were then thanked, asked if they had any questions and were allowed to leave once they were ready. As no names are taken for anonymity, each participant had a number in order to honour their right to withdraw even once the study had ended and they had left. However, they were given a date, after this date they would not be able to further withdraw as the data would have been analysed and participant numbers wiped. Participants were fully aware of this before they left the room and their participant number and right to withdraw date was written on the debrief sheet.

2.6 Method of analysis.

A 2 (Media) x 2 (Body dissatisfaction) x 2 (Body stimuli) mixed ANOVA was used to analyse the data. A paired comparison was also used to explore significant interactions. The analysis was completed using IBM SPSS Statistic’s programme. The analysis will establish main effects of the variables, as well as exploring to see if there are two-way or 3-way interactions with the variables.
Chapter 3- Results.

Table 1 shows the mean scores for media consumption and body dissatisfaction. Mean body dissatisfaction score was 15.67, this is lower than the expected mean score in the non-clinical population (Garner, 1991). All participants used the internet for something other than academic study, 94% of participants had a Facebook profile and 80% had an Instagram profile.

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Media consumption score</th>
<th>Body dissatisfaction score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>21.80</td>
<td>28.27</td>
<td>15.67</td>
</tr>
<tr>
<td><strong>Std. Deviation</strong></td>
<td>6.55</td>
<td>9.87</td>
<td>9.95</td>
</tr>
</tbody>
</table>

A mixed design three-way ANOVA was conducted with body stimuli (fat, thin) as a within-subject factor and body dissatisfaction (high, low) and media consumption (high, low) as the between-subject factors. This revealed a significant main effect of body stimuli \(F(1,48)=6.86, \text{P}<0.05, N^2=.13\). The mean attentional bias for trials containing ‘fat’ stimuli indicated that participants were quicker at responding to the experimental stimuli over the neutral stimuli (mean attentional bias= 5.46 std. error= 2.62). For thin trials, the mean attentional bias indicated that participants were quicker at responding to neutral stimuli (mean attentional bias=-3.88 std. error=2.99).

There was no significant main effect of Media frequency \(F(1,48)=.62, \text{P}>0.05, N^2=.013\) or body dissatisfaction scores \(F(1,48)=.003, \text{P}>0.05, N^2=0.0\).

There was a significant 2-way interaction between the body stimuli and media consumption \(F(1,48)=5.03, \text{P}<0.05, N^2=.095\). This is shown in Figure 1. Pairwise comparisons revealed that low media consumers do not have significant differences in bias to body related stimuli \(T(24)=-0.33, \text{P}>0.05\). The pairwise comparisons also revealed that high media consumers had a significantly higher bias to fat body related stimuli compared to thin stimuli \(T(26)=-3.47, \text{P}<0.01\).
Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli.

There was also a significant 3-way interaction between body stimuli, media consumption and body dissatisfaction \([F(1,48)=4.16, P<0.05, \text{partial } \eta^2=0.08]\). This is shown in Figure 2. These were explored using simple main effects.

For trials containing fat body stimuli, there was a significant difference in the attentional bias between high and low media users who scored low on body dissatisfaction \([F(1,48)=5.36, P<0.05, \text{partial } \eta^2=0.1]\). Those who scored low on both media consumption and body
dissatisfaction did not have an attentional bias to fat body stimuli (they were quicker at identifying the probe that replaced neutral trials). There were no significant differences in the attentional bias for fat body stimuli in between high and low media users who scored high on body dissatisfaction \([F(1,48)=.586, P>0.05, \eta^2=.012]\).

For trials containing thin body stimuli, there were no significant differences in the attentional bias between high and low media users who scored low on body dissatisfaction \([F(1,48)=2.50, P>0.05, \eta^2=.05]\). There was also no significant differences in the attentional bias between high and low media users who scored high on body dissatisfaction \([F(1,48)=.25, P>0.05, \eta^2=.01]\).
Chapter 4- Discussion.

4.1- Overview

This project aimed to explore the impact of females’ body dissatisfaction and media consumption on the attentional bias to body stimuli in order to extend upon previous research. Much of the previous research into body dissatisfaction and media consumption primarily uses Facebook as its sole focus on ‘social media’ (Fardouly et al., 2015; Fardouly & Vartanian, 2015; Meier & Gray, 2014; Tiggemann & Slater, 2013). As findings suggest that it is viewing images on Facebook that correlates to body dissatisfaction, rather than general Facebook use (Meier & Gray, 2014), there is need to consider Instagram within this ‘social media’ research as it is a site based solely on image sharing. Research in this area also lacks experimental research. By taking research into body dissatisfaction and cognitive biases in a clinical population using body related stimuli within a dot probe, this project gives the experimental component that is missing in body dissatisfaction and media research, as well as extending the experimental findings focused within the clinical population, into a non-clinical sample.

4.2- Findings

When looking at the impact of both social media consumption and body dissatisfaction on the bias to body stimuli it is clear to say that the hypothesis that users who are both high scorers on social media consumption measures and body dissatisfaction measures would be the ones who would be most bias to body stimuli was unfounded. However, the hypothesis that those who consume more social media would have a higher attentional bias to body stimuli was supported, but only for the words that related to a larger body image. This suggests that regardless of the way women feel about their body, if they spend a lot of time consuming social media, they become more salient to fat body stimuli. This finding is a completely new finding within literature as it appears no other research has used an experimental measure to test individuals’ attention to body stimuli based on how much media they are consuming.

The hypothesis that those who have a higher body dissatisfaction would have a higher bias to body stimuli was also unfounded, but regardless of body dissatisfaction, overall the participants were significantly faster at respondent to the fat stimuli. On the one hand, this differs to the findings within the clinical, more widely researched field of body dissatisfaction and attentional bias and on the other, it just adds to the already contradictory findings within the non-clinical population. One clear reason for why the present finding contradicts research
using a clinical sample may be because the exclusion criteria did not allow anyone with a history of eating disorders to take part. Therefore, the scores within the EDI, used to gain a body dissatisfaction measure, are expected to be lower than those who have eating disorders. Therefore, the difference in the body dissatisfaction score between the high and low groups is likely to be smaller than the difference in scores between clinical samples and non-clinical controls in previous studies (Reiger et al., 1998; Shafran et al., 2007).

Within the small number of contradictory findings within non-clinical samples, one reason for why the current finding may differ to other researchers’ findings may be down to methodology. One study containing female students, and measuring attentional biases using a dot probe task on fat and thin body images found that the females were faster at reacting to the probe when it replaces a thin body, regardless of how dissatisfied they were with their bodies (Glauert et al., 2010). The current finding that regardless of body dissatisfaction, overall, women were significantly faster at identifying fat stimuli therefore contradicts the findings by Glauert et al’s. (2010) findings. As the same population of participants were used (female students), one reason for contradictory findings may be that Glauert and colleagues used a pictorial version of a dot probe for body stimuli, whereas this project used words as its stimuli. It is argued by some researchers that using a pictorial dot probe is a better, more sensitive indicator of attentional bias (Walker, Ben-Tovim, Paddick, & McNamara, 1995). One study, however, used a word-based dot probe and both the drive for thinness and body dissatisfaction subscales of the EDI-2, on female psychology students did not find any significant biases in attention between high and low scorers (Placanica, Faunce, & Job, 2002). The findings of this project support the findings made by Placanica and colleagues as well as containing very similar methodology through the use of the same 2 EDI-2 subscales and a word-based dot probe.

Within the project, a significant 3-way interaction was found that was not hypothesised. This interaction was that within the fat body stimuli condition, those who were low social media consumers and showed lower levels of body dissatisfaction were the only group to not show any bias for the fat words. Although not hypothesised, it would make sense to have suggested that those with less body dissatisfaction and lower media consumption would have less of or no bias to body stimuli. Based on findings in body dissatisfaction and attentional bias research, this finding can show support for clinical research as the control groups within that research (non-clinical participants) showed less of a bias than those with eating disorders.
Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli.

(Rieger et al., 1998; Shafran, et al., 2007). Within the same group, although not statistically significant, they appeared to be the only group to not divert their attention away from thin stimuli. These findings suggest that if an individual does not consume too much social media and are more satisfied with their own bodies that they are less likely to have distorted and dysfunctional ways of viewing their bodies in a way that those who have dissatisfaction with their body (Cooper, 2005), or high levels of media consumption might (Fardouly & Vartanian, 2015).

4.3- Considerations

The present study contains several strengths and weaknesses. This study has provided correlational research with an experimental edge that works to establish cognitive biases within body dissatisfaction and media use. The findings within this study should be interpreted attentively due to methodological problems. One problem within the methodology was dichotomization, by a median split, in research this method has been found to reduce effect size and even completely lose statistical significance, compared to the same data sets also analysed on a continuum (MacCallum, Zhang, Preacher, & Rucker, 2002). As already discussed, the body dissatisfaction scores in high and low participants were likely to have a smaller difference between high and low scores than that of a clinical versus non-clinical population. Therefore, use of a median split may not have been the best way to analyse results. Problems of using a median split of data, within body dissatisfaction and attentional bias areas of research has been controlled for, in a previous study by splitting EDI scores into thirds, and only using the upper and lower tertiles (Placanica, Faunce, & Job, 2002). However, even after trying to control for this methodological problem, Placanica and colleagues (2002) still found no significant effects for high EDI scorers showing attentional biases towards body stimuli. Not only could a median split be problematic within the body dissatisfaction measure of the study, it could also be a problem within the media consumption variable. As already stated, using dichotomization can reduce the effect size within research (MacCallum, et al., 2002), as an effect was found between high media consumption and reaction time to body stimuli, but not with lower media consumers, it could be that those scoring in the ‘low’ media consumption category were not necessarily low consumers of media, but based on the median split methodology were automatically categorized into this group. Based on the sample used and statistics that suggest 91% of 16-24 year olds engage in social media (Office for National Statistics, 2016), it is likely
that a high percentage of participants in this study would be suited for the ‘high’ media consumption group.

Within the study, the problematic variable appears to be the use of the EDI-2 (Garner, 1991) for several reasons. Firstly, the EDI has a high face validity, meaning that the items within the inventory obviously reflect what they aim to be testing. This is problematic as participants may not have answered as honestly as they could have. Within the clinical population is has been found that eating disorder patients are likely to deliberately distort their responses (Vitousek, & Orimoto, 1993), however this could also be the case for participants within this study. Secondly, as the sample used were all psychology students, which means that they are likely to be familiar with the EDI anyway. Given these two problems combine, it could mean that some of those who were ‘low’ scores in body dissatisfaction may not truly be ‘low’ in body dissatisfaction, but could have been concealing their true feelings. When looking at responses to the EDI subscales within the questionnaires given to participants, it appears that some respondents used ‘sometimes’ as a response frequently, which gives a score of 0 each time. If a participant was not being completely truthful and masking their feelings of dissatisfaction for various body parts with ‘sometimes’ rather than ‘always’, ‘usually’ or ‘often’, it could mean that they are scoring low, and therefore grouped into the ‘low’ body dissatisfaction group, when perhaps they could be secretly dissatisfied with their body but not comfortable in giving a true response. In eating disorders the cognitive measures such as the dot probe task are less transparent, and therefore are less likely to be deliberately distorted (Faunce, 2002). If participants who have been grouped into the ‘low’ body dissatisfaction category have deliberately distorted their responses to the EDI subscales, this could explain why there was no effect of body dissatisfaction on the reaction time to fat and thin body stimuli. However, there is no way to be sure if any participants deliberately distorted their responses to the questionnaires within this study. In order for improvement, buffer questions could be added in order to try to conceal the true aims of the questionnaire.

A further problem with using the EDI within the non-clinical population is that it was constructed to be used in clinical populations (Garner, 1991). There are various other questionnaires and inventories that can be used that may work better with non-clinical samples, for example, the Body Shape Questionnaire (BSQ), which is a 34-item questionnaire that is used to measure an individual’s concerns with body shape (Cooper, Taylor, Cooper, & Fairburn, 1987). This questionnaire can be used with high internal consistency in both the non-
clinical population of women and individuals with clinical eating disorders (Cooper, et al., 1987).

Much of the research into body dissatisfaction and social media consumption also include questionnaires relating to social comparison (Brown & Tiggemann, 2016; Fardouly & Vartanian, 2015; Fardouly et al., 2015; Meier & Gray, 2013). Social comparison measures were not considered in this study. A reason for there being no significant findings between high media consumers who also had high body dissatisfaction may relate to social comparison not being considered. The research suggests individuals who compare themselves to others more frequently have a higher body dissatisfaction (Keery, van den Berg, & Thompson, 2004). This could mean that individuals who also have more tendencies to engage in social comparison, high body dissatisfaction, and high media consumption would be more likely to have further elevated levels of bias towards fat stimuli.

4.4 Future research.

Overall this study has indicated that women who use are high consumers of social media focus their attention towards fat stimuli than those women who are lower media consumers. The study also suggests that those who are both low consumers of media and appear more satisfied with their bodies do not show a bias towards fat stimuli. Although findings did not show support for the hypothesis that, females who are high media consumers and have elevated levels of body dissatisfaction would be the most bias to body stimuli, was not founded within this research, this hypothesis still cannot be ruled out. Upon considering methodological problems used to gain data, particularly for the body dissatisfaction variable the two subscales of the EDI-2 (Garner, 1991) were not the most appropriate inventory to use and based on further research it would appear that an inventory that is more applicable to non-clinical and clinical populations alike, along with adding buffer questions to reduce face validity would provide a better indication of body dissatisfaction.

Although this study has succeeded in adding experimental research to correlational body dissatisfaction and social media literature and has found significant differences in the attentional bias between high and low media users, more research needs to be conducted in broader populations to support this new finding. For future research, in order to gain a better understanding of the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli, a few improvements can be added. Firstly, inclusion of an inventory such as the BSQ (Cooper et al., 1987) to the body dissatisfaction variable should
improve the measure, as well as including buffer items that are not to be scored to lower face validity of the questionnaires. Secondly, including social comparison into the research may help to gain understanding as to why no interactions were found between high social media consumption and high body dissatisfaction on attentional biases. Lastly, to add to and improve research, an alternative could be used instead of a median split in data. Participants could be pre-screened by distributing the questionnaires to as many females as possible. Then those who have the highest and lowest scores within the questionnaires could be invited into the laboratory to take part in the dot probe task.

4.5- Final Conclusions

In conclusion, this research brings some completely new findings to existing literature, by combining experimental research into attentional bias and body dissatisfaction/eating disorders, with correlational research into social media and attentional bias. As well as improving existing research into social media consumption which focuses predominantly on Facebook, this research has included Instagram, a newer website with the sole purpose to share images, something that has been found to be the main predictor of body dissatisfaction within media consumption (Brown & Tiggemann, 2016; Meier & Gray, 2013). As this research appears to be the first of its kind to merge two fields of body image research together, there is clear room for improvement in future research. Improvements and future research are essential, as these findings suggest that there are interactions between all variables.
5: References


Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli.


Exploring the impact of social media consumption and body dissatisfaction on the attentional bias to body stimuli.


6: Appendices
6.1 - Information sheet.

CARDIFF METROPOLITAN UNIVERSITY

Title of Project: The impact of mood and social media on attentional bias.

Participant information sheet

The study
This study is being arranged by [REDACTED] as part of her Level 6 Psychology dissertation project. The project is concerned with your mood and attentional bias. This is an invitation for you to join the study and to let you know what is required from you as a participant.

It is important to maintain physical and psychological wellbeing of the participants both throughout, and after the study has taken place. Therefore, it is important you understand the aims and procedure of the research before you take part.

What would happen if you agree to participate?
If you agree to take part you will complete an attention task, lasting 20 minutes. You will then be required to complete two online questionnaires that will collect information on your current mood and your social media usage. This should take no longer 10 minutes.

Exclusion criteria
You must be over 18 to participate.
You must not have any history of an eating disorder due to the words in the attention task.

Potential Risk
You will be exposed on words rating to body image and weight which may cause some participants discomfort.
You may wish to know the results of the attentional tasks and questionnaires however this information is not allowed to be shared or discussed so you will not have the option to view your scores.

Potential benefits
You will be helping contribute to the researcher’s final year project and will be helping to expand in research and knowledge into attentional bias.
If you are a psychology student you will also benefit by having 3 credits awarded for taking part.

Withdrawal, anonymity and confidentiality
As a participant in this study, your data will be anonymous. In order to do this you will instead be given a participant number. Only the researcher and their supervisor will have access to the data received. All the information you provide will be strictly confidential and you have the right to not answer any questions that you may feel uncomfortable being asked.
Participation in this study is voluntary and you have a right to leave and withdraw from the study at any time. To honour your right to withdraw you will be given the participant number used to link your attention task results to your questionnaire answers. If you wish to withdraw after leaving the study do not hesitate to contact me with your participation number. If you wish to withdraw, you must do this by __/__/2017. After this date participation numbers will be removed from the data set and will be analysed for publication.

If you have any questions about the study, please contact: [REDACTED]
6.2- Debrief sheet

Firstly, thank you for participating in this study.

This study explored whether body dissatisfaction and social media use has an impact on the attention that is paid to body related words. There has been a great deal of literature within a clinical population that suggests those with a higher score in body dissatisfaction pay more attention to body image words (Rieger et al., 1998).

There is also a great deal of literature to suggest that social media has an effect on the way women perceive and feel about their body (Brown & Tiggemann, 2016; Fardouly & Vartanian, 2015). This area does however lack experimental research.

This study therefore aimed to combine the two in order to consider a non-clinical sample and input some experimental research (through the dot probe task), into the area of social media and body dissatisfaction.

If you feel like you have been affected by the nature of this experiment or feel that you would like support with the issues relating to body dissatisfaction or body image there are a number of resources available:

- BEAT is one of the UK’s leading charities that provides support and advice to individuals struggling with eating disorders. Their website offers assistance in gaining support for eating disorders and can be accessed through this link - [www.b-eat.co.uk](http://www.b-eat.co.uk)
- Student services within the university also offer a free counselling service, should you feel like you need further support.

Your right to withdraw still applies until __/__/2017 and your participant number is ___.

Thank you again for participating in this project,

Supervisor: hseage@cardiffmet.ac.uk
6.3- Social media consumption questionnaire

Please circle the appropriate answer to each question.

1. Do you have daily Internet access available (at home, school, workplace, etc.?)

   Yes/No

   If you answered yes to question 1, please continue on to the next questions. If you answered no, please skip the remainder of the Internet and Social Networking Site Questionnaire.

2. On average, how frequently do you use the Internet (outside of instructor-led classroom activities, on any device—desktop, laptop, tablet, mobile phone, etc.)?

   a). Never/almost never
   b). Less than ½ hour per day
   c). ½–1 hour per day
   d). 1–2 hours per day
   e). 2–3 hours per day
   f). More than 3 hours per day

3. Do you have an active Facebook account?

   Yes/No

   If you answered yes to question 3, please continue on to the next question. If you answered no, please skip the remainder of the Internet and Social Networking Site Questionnaire and move on to page 5.

   Approximately how long have you had an active Facebook account?

   ______________

4. In a typical week, how frequently do you use Facebook (on any device)? While daily time spent may vary, please estimate daily use as an average across the week.

   a). Never/almost never
   b). Less than 1 hour per week
   c). Less than ½ hour per day
   d). Between ½ hour and 1 hour per day
   e). 1–2 hours per day
   f). More than 2 hours per day

5. Your privacy settings are currently set to:

   a). Public
   b). Private
   c). Custom
   d). I don’t know

6. Approximate number of current Facebook friends

   __________

7. Approximate number of photos of you on Facebook

   __________

8. Your current Facebook Profile photo is best described as:

   a). A photo of just me, waist and above visible
   b). A photo of just me, full body visible
   c). A photo of me and friend(s), waist and above visible
   d). A photos of me and friend(s), full body visible
   e). A photo image of a person other than me
   f). A photo/image with no people in it
   g). Other/I don’t know
Please mark an X in the box that best fits approximately how often you do the following on your Facebook account:

<table>
<thead>
<tr>
<th>Activity</th>
<th>0) I don’t know</th>
<th>1) Almost never or never</th>
<th>2) A few times a year</th>
<th>3) Every few months</th>
<th>4) On average, about once a month</th>
<th>5) More often than once a month</th>
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<tr>
<td>9. Create an event</td>
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<td>10. Create a group</td>
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<td>11. Write a Facebook Note</td>
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<td>12. Create/Share a Facebook Quiz</td>
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<td>13. Create a photo album with photos of yourself and friends/family *</td>
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<td>14. Create a photo album featuring artwork/photography (photos of subjects other than yourself, friends, or family)</td>
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<td>15. Join “groups”</td>
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<td>16. Update your profile photo*</td>
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<td>17. Update your profile interests (books, movies, TV, activities)</td>
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</table>

Please mark an X in the box that best fits approximately how often you do the following activities when visiting Facebook:

<table>
<thead>
<tr>
<th>Activity</th>
<th>0) Don’t know</th>
<th>1) Almost never</th>
<th>2) Rarely</th>
<th>3) Once in a while</th>
<th>4) Often</th>
<th>5) Nearly every time I log on</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Use Facebook Chat</td>
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<tr>
<td>19. Play games (Farmville, etc.)</td>
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<tr>
<td>20. Send/receive private messages</td>
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<td>21. Post a photo*</td>
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<td>22. Post a status update</td>
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<td>23. Post a link to a news story, video, Web site, etc.</td>
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<td>24. View friends’ photos that they’ve added of you*</td>
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<td>25. View friends’ photos of themselves*</td>
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<tr>
<td>26. View friends’ status updates</td>
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<tr>
<td>27. View friends’ links to news stories, videos, Web sites, etc.</td>
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<td>28. Comment on friends’ photos*</td>
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<tr>
<td>29. Comment on friends’ status updates</td>
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<tr>
<td>30. Comment on friends’ links to news stories, videos, Web sites, etc.</td>
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<tr>
<td>31. Tag yourself in friends’ photos*</td>
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<tr>
<td>32. Untag yourself in friends’ photos*</td>
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</tbody>
</table>

*Appearance-related score (n=8).

33. Do you have an active Instagram account?

Yes/No

If you answered yes to question 33, please continue on to the next question. If you answered no, please skip the remainder of the Questionnaire.

34. Approximately how long have you had an active Instagram account?
35. In a typical week, how frequently do you use Instagram (on any device)? While daily time spent may vary, please estimate daily use as an average across the week.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>a) Never/almost never</td>
<td>d) Between ½ hour and 1 hour per day</td>
</tr>
<tr>
<td>b) Less than 1 hour per week</td>
<td>e) 1–2 hours per day</td>
</tr>
<tr>
<td>c) Less than ½ hour per day</td>
<td>f) More than 2 hours per day</td>
</tr>
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</table>

36. Your privacy settings are currently set to:

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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>a) Public</td>
<td></td>
</tr>
<tr>
<td>b) Private</td>
<td></td>
</tr>
<tr>
<td>c) I don’t know</td>
<td></td>
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</tbody>
</table>

37. Approximate number of Accounts you follow on Instagram

__________

38. Approximate number of photos of you on Instagram

__________

39. Your current Instagram Profile photo is best described as:

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<table>
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</thead>
<tbody>
<tr>
<td>a) A photo of just me, waist and above visible</td>
<td></td>
</tr>
<tr>
<td>b) A photo of just me, full body visible</td>
<td></td>
</tr>
<tr>
<td>c) A photo of me and friend(s), waist and above visible</td>
<td></td>
</tr>
<tr>
<td>d) A photos of me and friend(s), full body visible</td>
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<tr>
<td>e) A photo image of a person other than me</td>
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<tr>
<td>f) A photo/image with no people in it</td>
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<td>g) Other/I don’t know</td>
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</tbody>
</table>

Please mark an X in the box that best fits approximately how often you do the following on your Instagram account:

<table>
<thead>
<tr>
<th></th>
<th>5) More often than once a month</th>
<th>4) On average, about once a month</th>
<th>3) Every few months</th>
<th>2) A few times a year</th>
<th>1) Almost never or never</th>
<th>0) I don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>40. Share a photo featuring artwork/photography (photos of subjects other than yourself, friends, or family)</td>
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<td>41. Update your Bio</td>
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<tr>
<td>42. Update your profile photo</td>
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</tr>
</tbody>
</table>

Please mark an X in the box that best fits approximately how often you do the following activities when visiting Instagram:

<table>
<thead>
<tr>
<th></th>
<th>5) Nearly every time I log on</th>
<th>4) Often</th>
<th>3) Once in a while</th>
<th>2) Rarely</th>
<th>1) Almost never</th>
<th>0) Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>43. Use Instagram direct message</td>
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<td>44. Send/receive private images</td>
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<tr>
<td>45. Post a photo</td>
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<tr>
<td>46. Post a photo of yourself</td>
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<tr>
<td>47. View friends’ photos that they’ve added of you</td>
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<tr>
<td>48. View friends’ photos of themselves</td>
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<td>49. View images on fitness accounts</td>
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<tr>
<td>50. Comment on friends’ photos</td>
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<tr>
<td>51. Tag yourself or get tagged in friends’ photos</td>
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</tbody>
</table>

*Appearance-related score (n=8).
### 6.4- Dot probe word list.

<table>
<thead>
<tr>
<th>Fat stimuli</th>
<th>Fat neutral</th>
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</thead>
<tbody>
<tr>
<td>1 Tubby</td>
<td>Wheelbarrow</td>
</tr>
<tr>
<td>2 Enormous</td>
<td>Bucket</td>
</tr>
<tr>
<td>3 Plump</td>
<td>Firewood</td>
</tr>
<tr>
<td>4 Gigantic</td>
<td>Dictionary</td>
</tr>
<tr>
<td>5 Flabby</td>
<td>Nappy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thin Stimuli</th>
<th>Thin Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bony</td>
<td>Mats</td>
</tr>
<tr>
<td>2 Skeletal</td>
<td>Remote</td>
</tr>
<tr>
<td>3 Undersized</td>
<td>Screwdrivers</td>
</tr>
<tr>
<td>4 Toned</td>
<td>Steros</td>
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</tbody>
</table>
Abstract: 260

Introduction: 3321
Methodology: 1100
Results: 486
Discussion: 2411

Total: 7318

Signed: _______________________

Date: ______________________