Does social media use influence attentional bias to body-related cues in females?

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Dissertation submitted in partial fulfilment of the requirements of Cardiff Metropolitan University for the degree of Bachelor of Science
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 of any other degree, and is not being submitted concurrently for any other degree.
Acknowledgements

Firstly, I would like to express my appreciation to all those who took part in my study. Without you, this would have not been possible, so thank you.

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Abstract

Literature has suggested that social media has an influence on decreasing self-esteem and confidence in females. Social media is covered with images of female bodies, more so the unrealistic portrayal of thin ideals. Majority of users spend their time viewing what others share which results in a vast amount of social comparison. This has led to many females suffering from body dissatisfaction, especially individuals with eating disorders. Elevated levels of body dissatisfaction have been related to higher attentional bias to body image stimuli. Research has focused predominantly on attentional bias in clinical patients with eating disorders. Whilst this is beneficial, there is little experimental research conducted on attentional bias in non-clinical females. This study aims to fill the gap in literature by carrying out an experimental study measuring the influence of social media on attentional bias to body-related cues in non-clinical females. More visually based social media platforms have been used to extend research. Psychology students (n=36) completed a social media usage questionnaire to establish a score. This was then followed by a visual dot probe task which included fat, thin and neutral stimuli. Participants were grouped into high or low social media usage using a median split. The data was analysed using a 2 – way ANOVA, which measured any main effects between the two social media groups. Findings demonstrated that there was no significant interaction of social media on stimuli type. However, there was a significant effect of social media on attentional bias to body-related cues in high social media users. This matched the predicted hypothesis.
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Chapter 1: Introduction

1.1 - Attentional bias to body-related stimuli

Attentional bias has been used to measure how attentive an individual is to a salient stimulus (Smeets et al. 2009). It is the “discrete change in direction in which an individual’s attention is focused so that they become aware of a particular part of their stimulus environment” (Williams, Watts, MacLeod, & Mathews, 1997, pg. 73). Attentional bias has been commonly used to measure cognitive functioning in individuals with disordered eating in a more indirect way (Maner et al. 2006). If the threat level of the stimulus is thought to be high, it will lead to the allocation of attentional resources to that stimulus (Williams, Watts, MacLeod & Matthews, 1988). Those that have an eating disorder, the threatening stimulus would be the body-related cues.

Attentional bias has significantly impacted the theory and maintenance of eating disorders (Shafran et al, 2007). Selecting attention to certain body stimuli can represent body dissatisfaction and can possibly lead to issues with eating behaviour (Fairburn, Shafran & Cooper, 1999). Research has suggested that females with eating disorders have a higher attentional bias to body-related cues than those who do not (Pinhas et al, 2014; Shafran et al, 2007). Similarly, individuals with elevated levels of body dissatisfaction, without disordered eating, also demonstrate higher attentional bias (Lee & Shafran, 2008).

Attentional bias is commonly measured by the ‘Stroop Task’ which can be modified to contain body-related words. The classic colour-word Stroop task requires the individual to identify the colour that emotional or neutral words are written in (Dong, Zhou & Zhao, 2011). The individual’s response time is measured and those with attentional bias to the presented stimuli will be delayed in colour naming. Research has suggested that females with eating disorders have colour naming impairment (Dobson & Dozois, 2004; Chesters, Monsell, & Cooper, 1998; Ben-Tovim et al. 1989; Harrison et al. 2010). It is thought that this is evidence that they are paying increased attention to body image stimuli on the task. However, contrasting research has critiqued the use of the Stroop task to measure attentional bias (Huon, 2007; Faunce 2002). One limitation of the Stroop task is that individuals only attend to a single stimulus with two different attributes instead of attending to two or more separate
stimuli (Treisman, 1969). This can make it difficult to understand whether the individual’s attention was drawn to the threatening stimuli or, directed away from it (Treisman, 1969; Aspen, Darcy & Lock, 2013).

The criticism of the Stroop task has led to the development of the visual dot probe paradigm (Starzomska, 2017). It has been suggested the visual dot probe task is a more superior and direct measurement of attentional bias (Wells & Matthews, 1994). The visual dot probe paradigm involves the use of a threatening and neutral stimuli, concurrently, one on the left side and one on the right, which is followed by a dot probe which replaces one of the stimuli (Corrado, Ceccarini & Sica, 2017; Rieger et al. 1998). The participant then identifies the location of the dot probe and their reaction time is measured. The task suggests that participants are quicker to respond to a stimuli that is personally salient (Rooijen, Ploeger, & Kret, 2017).

Previous research has measured the attentional bias to body-related cues in a clinical population, by using the visual dot probe paradigm (Blechert, Ansorge & Tuschen-Caffier, 2010). Using photos of the participants and control body image photos, results demonstrated that anorexia nervosa patients had faster responses when their own photo was the targeted stimulus. These findings have been replicated in other eating disorder populations, using body and neutral images (Aspen, Darcy & Lock, 2013; Starzomska, 2017). A similar study conducted by Shafran et al. (2007), used an image-based dot probe task and found that females with eating disorders were significantly quicker to respond to negative eating and neutral weight pictures than positive weight images. The results of these studies demonstrate that females with disordered eating, direct their attention away from positive and neutral body image stimuli, and are quicker at orientating attention to negative body image stimuli (Rieger et al, 1998; Aspen, Darcy & Lock, 2013). It has been suggested that this could be due to overpowering pre-existing, body image related biases within the individual that have derived from cultural norms and society (Loughnan, Mulgrew, & Lane, 2015), and can create negative views of their own body image (Thompson et al. 1999). Therefore, this could explain why females with eating disorders have a higher attentional bias to body-related stimuli than non-clinical individuals. As existing research has focused primarily on a clinical population, this current study will fill the gap by measuring attentional bias in a non-clinical female population.
Recently published research has used eye tracking to measure where attention is allocated (Jansen, Nederkoorn & Mulkens, 2005). Studies using females with eating disorders found that females attended significantly longer to negative body-related stimuli (Bauer et al. 2017; Jansen, Nederkoorn & Mulkens, 2005; Sperling et al. 2017), as well as to thin body types (Cho & Lee, 2013). However, research has criticised that eye-tracking provides little knowledge of the cognitive processes from the eye movement (Feng, 2003), as there is no theoretical interpretation of the data (Kok & Jarodzka, 2016).

Despite extensive research documenting attentional bias in clinical populations, there is a lack of research into attention to body-related cues in non-clinical samples. Using this population can expand research by demonstrating cognitive functioning in individuals without eating disorders. Potentially, there may be a difference in results as research has suggested that individuals with disordered eating, having a different thinking pattern when involving food (Fairbum & Brownell, 2005). The little research that has been conducted has demonstrated that females show an attentional bias to shape and weight related words through the dot probe task (Smith & Rieger, 2006). Further research has suggested that females with body dissatisfaction have an attentional bias to body stimuli (Moussly, Brosch & Linden, 2016), specifically to thin stimuli than fat (Glauert et al. 2010; Jospeh, LoBue & Riveria, 2016). Opposite findings have demonstrated that females with no body dissatisfaction were quicker at responding to thin ideal through a Stroop task (Johansson, Lundh, & Andersson, 2005). However, similar research using the Stroop task found no significant effect of body-related cues on attentional bias in females (Boon, Vogelzang, & Jansen, 2000; Loughnan, Mulgrew, & Lane, 2015). Findings of this particular research have all demonstrated inconsistent and conflicting findings, making it unclear whether non-clinical females locate their attention to body-related or avoid it.

To understand attentional bias to body stimuli in non-clinical individuals, it is important to acknowledge the factors that lead to body dissatisfaction. Research has suggested that there are certain sociocultural factors which can increase the risk of body dissatisfaction (Stice & Whitenton, 2002; Berg et al. 2007). For example, the media, (TV, magazines or social media) can cause heightened body dissatisfaction in females (King, Touyz, & Charles, 2000; Berg et al. 2007). Particularly on social media apps, females are exposed to a variety of body images that usually represent thin ideals which can impact an individual’s psychological wellbeing (Grabe et al. 2008; Markey, 2010). The increased popularity of social media has allowed users to upload unrealistic portrayals of one’s self (Meier & Gray, 2014), and has a huge link
to body image disturbance in females (Triggerman & Slater, 2013). The factors that influence body dissatisfaction makes it understandable as to why these individuals demonstrate a high attentional bias to body-related cues.

1.2 - Social media and its influence on body image

Social media has enhanced the way people communicate worldwide through content posting (Wu, Cheng, Zhang & Mei, 2016). Popular sites used for social interaction include Facebook, Twitter, Instagram, YouTube and Pinterest. The goal of these sites is to connect people around the world by sharing images, messages and much more. These platforms attract a wide range of users, however statistics show that the most common demographic groups are those aged 18-29 and female (Duggan & Brenner, 2013; Lenhart at al. 2010). The latter are more likely to use visually dominant media platforms like Instagram and Pintrest (Djafarova & Rushworth, 2017). Individuals using these sites are more likely to spend their time viewing content that has been uploaded rather than posting content themselves (Pempek, Yermolayeva & Calvert, 2009; Suziki & Calzo, 2004). The users that post content, provide information of their identity through images and posts about their daily activities and likes and dislikes. This opens up an opportunity for peers to provide feedback, and it seems that users desire responses on content they have posted (Stern, 2004). However, sometimes images that are posted can be edited to represent an idealised version of one’s self (Zhao, Grasmuck & Martin, 2008), as a user’s virtual appearance is easier to control than their real-world appearance (Kopaczz, 2011). On Facebook, people favour portraying their ‘good self’ (Nadkarni & Hofmann, 2012). This can impact viewer’s self-esteem as they compare themselves to individuals who have posted and edited ‘socially appropriate images’ resulting in viewer negative self-worth (Gibbons & Buunk, 1999; Lee, 2014). Existing research has aimed to understand the impact social media has on the population in relation to their body dissatisfaction and eating behaviours (Slevec, & Triggerman, 2011).

One explanation for why social media can contribute to body dissatisfaction can be understood by social comparison (Myers & Crowther, 2009). The social comparison theory states that we make evaluations of our personal worth against other people’s information and opinions, which results in self-assessment (Suls & Wheeler, 2011). This theory suggests that self-assessment affects wellbeing and this relationship is medicated by confidence and self-esteem. Research has examined the link between social comparison and Facebook usage.
(Lee, 2014), and found positive correlation between social comparison frequency and Facebook use. These comparisons were found to be predictors of negative feelings, suggesting that social media can impact body dissatisfaction (Vogel et al. 2014). Research has suggested that exposure to social media correlates with negative body image and disordered eating (Derenne & Beresin, 2006). The amount of time spent on social media, particularly Facebook, has been associated with negative emotions from social comparison, especially when exposed to idealised body images (Lin & Utz, 2015; Chou & Edge, 2012; Stronge et al. 2015; Buunk, Van Der Ze, & Vanyperen, 2001). Facebook users have expressed depressive symptoms due to social comparison (Appel, Gerlach, & Crusius, 2016; Chow & Wan, 2017). However, research has shown that overall Facebook use was not related to body dissatisfaction (Tiggerman & Miller, 2010), but more specifically the time engaging in photo activity (Meier & Gray, 2014).

Exposure to mass media has demonstrated a strong link with the development of eating disorders in females (Derenne & Beresin, 2006), specifically frequent Facebook use (Mabe, Forney, & Keel, 2014; Walker et al. 2015). Social media that promotes thinness has been related to eating disorders (Harrison & Cantor, 2006). Other platforms such as Instagram, has been positively correlated with a high risk of eating disorders which may be because of its image-based format and females posting ‘fitspiration’ images (Holland & Triggermann, 2016). Daily exposure to such images can result in negative self-assessment and subsequent body dissatisfaction and negative eating habits (Lee, 2014; Stice & Shaw, 2002; Cooper, 2005). Once the comparison has been created, the individual is motivated to change their behaviour to reduce the mismatch between themselves and what they are comparing to (Cash & Szymanski, 1995). One strategy to reduce this mismatch is a change in eating behaviour which can lead to eating disorders. Therefore, this supports research which suggests that exposure to body-related imagery on social media is associated with eating disorder symptoms in females (Becker et al. 2011).

1.3 - Rationale

A limitation of the current literature is that it lacks experimental research examining the effect of social media on body image (Holland & Triggerman, 2016). There is also little research into the effects of image based social media platforms such as Instagram and Twitter. Published research has focused on the impact of Facebook on body dissatisfaction
(Chou & Edge, 2012; Meier & Gray, 2014; Kim & Chock, 2015). It has been justified due to its exposure to millions of carefully selected images (Stronge et al. 2015). Unfortunately, this area of research has excluded the use of platforms such as Instagram and Twitter, which are also heavily image based. Instagram was developed in 2010 and its main function is image sharing, where users can edit and apply filters to their image before posting it to their followers. Similarly, Twitter has the function to post images. Whilst it does not include the function to edit and apply filters, it is still popular in uploading a great deal of images which can be exposed to users around the world. A particular study examined the relationship between Facebook and Instagram appearance focused activities and body image concern (Cohen, Newton-John, & Slater, 2017). Image concern and internalised thin-ideal was related to greater engagement in photo activity use on Facebook and appearance focused accounts on Instagram. The growth of Instagram and Twitter use suggests that more research needs to be done to examine its link to body image.

This current study aims to fill the gap in existing research, by using a non-clinical female sample. It will measure social media use across a number of platforms (Facebook, Instagram and Twitter) to represent a more accurate measure of social media usage. These platforms are also heavily based on viewing photos, which adds to the link of social media and body image (Djafarova & Rushworth, 2017). The use of attentional bias will allow the measurement of behaviour that correlates with body dissatisfaction and will show where individuals locate their attention, when presented with body-related cues. The measurement of attentional bias will be done through a visual dot probe task.

1.4 – Aim

The aim of this project is to investigate the impact of social media use on attentional bias to body-related cues within a non-clinical female sample.

1.5 - Hypothesis

Participants who report high levels of social media use will have higher attentional bias to body-related cues on a visual dot probe task.
Chapter 2: Methodology

2.1 – Participants

This study used an opportunity sample of 36, female, undergraduate psychology students aged 18-30. The mean age of the participants was 24 and the standard deviation 3.89. This age group was used as these are the most common consumers of social media. The participants were recruited though the Cardiff Metropolitan University’s SONA system and obtained course credits for their participation. Due to the nature of the study, an exclusion criteria was created. Participants that were dieting were not able to participate, as well as participants who currently had (or history of) an eating disorder.

2.2 – Design

This study is a quantitative experimental design. There was one independent variable which was social media usage, measured by an adapted version of the Facebook Questionnaire (FBQ) (Meier & Gray, 2014). This variable was between subjects. Participants were grouped into high and low social media user using a median split of data. The dependent variable was the attentional bias score for fat and thin cues from the visual dot probe task. This was measured in milliseconds (ms).

2.3 – Materials

Social media usage measure:

An adapted version of The Facebook Questionnaire (FBQ), (Meier & Gray, 2014) (Appendix 5.3) was used to measure social media use. The FBQ was created to assess Internet and Facebook use as well as the adapted categories of Instagram and Twitter made by the researcher. Participants’ were asked yes/no questions of whether they had internet access and if they had a Facebook, Instagram or Twitter account. Participants’ then indicated their daily Internet use from 6 responses (1= never/almost never to 6= 3+ hours a day). This was then
followed by typical use of their Facebook, Instagram and Twitter account from another 6 responses (1=never/almost never to 6= 2+ hours a day).

The FBQ also measured user activities for Facebook and an adapted category was made for Instagram and Twitter. 12 items were used and participants’ responded from a 5-point scale (1=almost never or never to 5=nearly every time I log on). 8 items were used for Instagram activities with the same 5-point scale response as well as for Twitter activities, which listed 5 items. Only these questions were scored as findings from Meier & Gray (2014), found significant results for viewing activities. Participants’ were also given a score if they had an active Facebook, Instagram or Twitter account. A high score represented high social media usage and low score represented low usage.

For the total FBQ, Cronbach’s alpha was 0.874, representing a high internal consistency.

Attentional bias measure:

A visual dot probe task was used to measure attentional bias to body image cues. The task was created using E-prime 2 and included 10 practice trials, this contained body image and neutral word pairs (see word list in appendix 5.4). There were 74 experimental trials, word pairs contained fat and neutral words e.g. tubby and wheelbarrow, and thin and neutral words e.g. undersized and screwdrivers. The visual dot probe task begins with participants’ viewing a black fixation point in the middle of the screen for 1000ms. This was then followed by two different stimuli, a body-related word and a neutral word. Each stimuli was assigned randomly on each side of the screen and was shown for 500ms. This was then followed by a black dot which was shown in the location of one of the stimuli. Participants’ then had to identify the location of the dot using either the ‘f’ key if it was the left or the ‘j’ key for the right. The dot probe used was displayed until the participant made a response. The time taken to identify the position of the dot was recorded in milliseconds. If participants’ attention was directed to one side, for example the body image word, then reaction time for identify the dot probe in that location will be quicker than reaction time for identifying the dot in the unattended lecture.
All the trials with incorrect responses were excluded from the data analysis. To produce the attentional bias score, the average reaction time (RT) of the body-related cues were subtracted from the average RT of the neutral words. Therefore, a positive value would indicate an attentional bias towards body-related words than the neutral words.

2.4 – Procedure

This study took place in a controlled and quiet laboratory setting. Before the study began, participants read an information sheet about the study and gave their informed consent (Appendix 5.1). Participants were also made aware that they could withdraw from the study at any time. The study began by completing the social media usage questionnaire (The Facebook Questionnaire (FBQ) Meier & Gray, 2014), which was followed by the visual dot probe task. The study lasted approximately 30 minutes. Upon completion, participants were given a debrief sheet which included information relating to the nature of the study. Due to anonymity, each participant was given a number on their debrief sheet if they felt that they wanted to withdraw their data after completion of the study. However, they were given a date on the debrief sheet which stated that after this date, data cannot be withdrawn as it would have been analysed.

2.5 – Ethics

Cardiff Metropolitan University Ethics Panel approved ethics for this study in December 2017. For this to be approved, there were several considerations made. Firstly, due to the content in the study an exclusion criteria was created. Individuals with a current (or history of) eating disorder are not able to participate as well as individuals who are currently dieting. Participants are made aware of this on the information sheet as well as on the participant panel, where they signed up to participate. A debrief sheet was given to the participants at the end of study and included their participant number, for anonymity and the date they can withdraw their data before (Appendix 5.2). Support links and information on eating disorder were also listed on the debrief sheet if participants wished to use it.
2.6 - Method of Analysis

The analysis used for the data was a repeated measures 2 way ANOVA, 2 (body-related cues) x 2 (social media usage). The analysis was completed using SPSS statistics programme. This will measure any main effects between the low and high social media usage groups.
Chapter 3: Results

All participants had a Facebook profile, 89% had an Instagram profile and 69% had a twitter profile. Table 1 shows the mean scores for social media usage along with participant’s mean age.

Table 1. Table of means and standard deviation of participant’s age and social media usage questionnaire score.

<table>
<thead>
<tr>
<th></th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>24±3.89</td>
</tr>
<tr>
<td>Social media usage</td>
<td>82.94±21.28</td>
</tr>
</tbody>
</table>

Levene’s test revealed the variance for fat cues $F(1, 34) = 6.17$, $p > .05$, therefore the homogeneity of variance assumption was not violated. For thin cues $F(1, 34) = 9.90$, $p < .05$, indicating that homogeneity of variance was violated for this variable.

To explore the influence of cue type and social media usage on attentional bias, a repeated measures two-way ANOVA was conducted. This had within subject variables, body-related cues (fat, thin) and social media usage (high, low).

There was a significant effect of social media on attentional bias to body-related cues, ($F(1, 34), = 8.9$, $MSE = 493656.3$, $p < .05$, $n^2 = .207$). This showed that high social media users had a higher attentional bias to body stimuli in comparison to low social media users.

There was no significant interaction of social media usage on stimuli type, $F(1,34), = .339$, $MSE = 8615.42$, $p > .05$, $n^2 = .010$

There was no significant main effect of stimuli type, $F(1, 34), = 0.15$, $MSE = 386.32$, $p > .05$, $n^2 = .000$

Figure 1 shows mean attentional bias scores to fat and thin stimuli for high and low social media users. Participants with a high social media usage had a high attentional bias to fat and thin stimuli. Low users demonstrated attentional bias to thin stimuli, but not for fat.
Figure 1. Mean attentional bias scores of low and high users to fat and thin stimuli.
4.1 – Overview

This project aimed to investigate the influence of social media use on attentional bias to body-related cues. To expand upon existing research, a non-clinical population was used due to previous literature primarily presenting findings in individuals with eating disorders (Aspen, Darcy & Lock, 2013; Shafran et al. 2007; Bauer et al. 2017). Research into social media and body image have focused mainly on Facebook as their social media measure (Meier & Gray, 2014; Harrison & Cantor, 2006; Triggerman & Slater, 2013). However, results have suggested that photo activity is what correlates to body image and body dissatisfaction than general Facebook browsing (Meier & Gray, 2014), so the use of more image based social media apps such as Instagram and Twitter have been included. To further add to the gap in research, an experimental design was used which is a factor that has been missing in previous social media and body image research. To measure attentional bias a visual dot probe task was used, which is a valid measurement favoured by researchers (Wells & Matthews, 1994; Rooijen, Ploeger, & Kret, 2017).

4.2 – Findings

Before examining the impact of social media on attentional bias to body-related cues, it was predicted that high social media users would have a higher attentional bias to body-related cues. This hypothesis was supported for words that related to fat and thin cues. These findings may demonstrate that females who spend a lot of time viewing social media, become more salient to body-related cues. It was also found that for low social media users, they had an attentional bias to thin cues, but not for fat cues. This was a result that was not predicted and has not been discovered in previous research. Overall, high users were significantly faster at responding to fat and thin cues than neutral. Previous findings have matched these results as they have found that females had a higher attentional bias for body stimuli than neutral (Smith & Rieger, 2006; Dobson & Dozois, 2004; Pinhas et al, 2014). However, this was only
demonstrated in females with eating disorders, suggesting that regardless of having an eating disorder or not, females are likely to direct their attention to body stimuli over neutral.

The small research looking into body image and attentional bias in a non-clinical population has focused more specifically on the influence of body dissatisfaction on attentional bias – something which was not included in this current study. A study in particular, using female students and a visual dot probe task found that the females were faster at detecting the probe when it was replaced with body stimuli, regardless of how high or low their body dissatisfaction was (Glauert et al., 2010). This suggests that attentional bias to body stimuli is apparent in females regardless of how dissatisfied they are with their bodies. However, further research has shown that females with high levels of body dissatisfaction, select their attention to body stimuli (Mousslly, Brosch & Linden, 2016; Smith & Rieger, 2006). As body dissatisfaction was not measured in this current study, it is difficult to argue whether high social media users also demonstrated high body dissatisfaction which could have dually led to attentional bias to body-related cues.

After conducting the analysis through a 2 way ANOVA, the descriptive statistics demonstrated an interaction between low social media users and thin stimuli whilst also showing no attentional bias to fat stimuli. This may suggest that lower social media usage could have less of a bias to fat stimuli. However, the bias to thin stimuli has matched findings in previous research (Glauert et al., 2010; Joseph, LoBue, & Riveria, 2016; Cho & Lee, 2013). This could be due to the common portrayal of idealised thin bodies in social media (Grabe et al., 2008; Chou & Edge, 2012), and may suggest that the less time spent on social media directs attention away from fat cues and towards thin. This could also demonstrate that low social media users have lower body dissatisfaction, as research has shown that being exposed to thin ideal for a short period of time; body satisfied females responded positively to thin ideal images (Johansson, Lundh & Andersson, 2005). Johansson and colleagues further go on to suggest that these results were perhaps due to a strategic avoidance of the negative impact of exposure to thin ideal and therefore presenting an opposite, positive response to the stimulus. It could further go on to suggest that females that use social media less, are more satisfied with their body and are less likely to have negative and distorted views of their own body in comparison to those who high levels of body dissatisfaction and social media use (Cooper, 2005). These findings may support the interaction between low social media users and attentional bias to thin body cues in this current study. However, the
mean attentional bias score for low users towards thin stimuli was quite low, so findings can only be suggestive and more research needs to be done to confirm this.

4.3 – Considerations

This current study has several strengths and limitations. This studied provided experimental research to examine the impact of social media use on attentional biases to body-related cues. After conducting this research, there have been a few methodological issues identified. Firstly it is evident that the sample size is too small, and these findings cannot be generalised to wider population. Secondly, the dichotomization, created by a median split for low and high social media groups. Research has suggested that this method creates the loss of statistical power, as it is harder to find effects between the two variables than with data that is continuous (Aiken & West, 1991; Maxwell & Delaney, 1993). Using this for social media usage could be problematic as an effect was only found between high users and body-related cues but not with low users. This could mean that participants who scored ‘low’ were not necessarily classed as low social media users, but based on the median split were automatically placed into that group. This sample was used based on statistics that individuals aged 18-29 are the most frequent users of social media (Duggan & Brenner, 2013). It is likely that majority of the participants would be categorised as high social media users.

Another possible problem within the methodology would be the body-related cues in the attentional bias measurement. The current study used body-related words over images and it has been argued that using images within the visual dot probe task is a better and more sensitive indicator of attentional bias (Walker, Ben-Tovim, Paddick, & McNamara, 1995). Research using a word based dot probe task in high and low body dissatisfaction groups found no significant attentional bias between both groups (Placania, Faunce & Job, 2002). Further research has examined the reliability of a word based dot probe task and found it to be an unreliable method of measuring attention (Schmukle, 2005). Literature using images have found significant biases in attention to body-related stimuli (Aspen, Darcy & Lock, 2013; Shafran et al. 2007; Blechert, Ansorge & Tuschen-Caffier, 2010). However, past research has argued that both versions of the visual dot probe task were unsuitable in measuring attention (Staugaard, 2009). Regardless of the type of dot probe version used, this current study was successful in measuring attentional bias to body-related cues.
Research focusing on social media and body image has been linked to high levels of body dissatisfaction in females (Mousslly, Brosch & Linden, 2016; Glauert et al. 2010) more specifically, females with disordered eating (Starzomska, 2017; Lee & Shafran, 2008; Pinhas et al, 2014). Whilst this current project expanded research by using a non-clinical population, including a body dissatisfaction measure would allow more comparisons between a non-clinical and clinical population. The findings from this current study could suggest that participants in the high usage category would demonstrate high levels of body dissatisfaction, which leads to biases in attention to body-related. This also matches findings in previous literature which demonstrated that individuals who consume a lot of social media are more likely to be dissatisfied with their own body (Markey, 2010; Myers & Crowther, 2009; Triggerman & Slater, 2013). This can also relate to why low social media users did not attend to body-related cues as they could have displayed low levels of body dissatisfaction. However, these results can only assume this idea and do not support it. Using a body dissatisfaction measure could establish any effect it has on attentional bias whilst also measuring social media use.

The effect of body dissatisfaction has been heavily related to social comparison through social media use (Lee, 2014; Vogel et al. 2014; Lin & Utz, 2015). This was another measure not considered in this study. Social comparison has been linked to negative feelings arising about their own body, and some have even expressed developing depressive symptoms (Stronge et al. 2015; Chow & Wan, 2017). If this measurement was used, it could have demonstrated the effect of body dissatisfaction that arises from high social media usage and social comparison. It may have also been that low social media users could have displayed signs of social comparison as well. The research supporting this idea could suggest that individuals who use social media, engage in social comparison which leads to body dissatisfaction and therefore would be more likely to attend to body-related cues in the visual dot probe task.

4.4 - Future research

One consideration that could be made for future research would be including another method to split data between social media users. Participants could be given a questionnaire prior to taking part in the study and once scores were generated, those who have the highest and lowest scores could be further used to take part in a visual dot probe task.
This study has been successful in proving that high social media users focus their attentional to body-related cues in comparison to low users. Whilst there was no hypothesis for body dissatisfaction, it could be suggested that high social media users display high levels of dissatisfaction with their own body. After considering a few methodological changes, this study could be improved by adding a body dissatisfaction measure, The EDI-2 (Garner, 1991), to measure the discontentment with overall body shape and size of the individual. This would allow more in depth findings of whether body dissatisfaction plays a role in attentional bias to body-related cues. This would also provide comparisons between non-clinical and clinical females. Similarly, including a social comparison measurement may help to gain more understanding of the impact social media can have on personal body image.

4.5 - Final Conclusions

To conclude, this current project adds some new findings to existing research by using experimental research to identify the influence social media has on attentional bias to body-related cues, with statistical differences examined between high and low social media groups. Using a non-clinical population, it allowed comparisons to previous research that have mainly focused on females with eating disorders. The use of social media has improved existing research by following the measurement of Facebook use, as well as including more image-based apps, Instagram and Twitter. Whilst this project has been successful at completing its hypothesis, there are clear considerations that could be made to improve future research.
References


Holland, G., & Tiggerman, M. (2016). “Strong beats skinny every time”: Disordered eating and compulsive exercise in women who post fitspiration on


Kopacz, I. (2011) ‘Say lovely things about me so that I know I am like that!’ The role of positive photo comments posted on social networking websites in the


Tiggemann, M., & Miller, J. (2010). The Internet and Adolescent Girls’ Weight Satisfaction and Drive for Thinness. *Sex Roles, 63*(1), 79-90. DOI: [http://dx.doi.org/10.1007/s11199-010-9789z](http://dx.doi.org/10.1007/s11199-010-9789z)


Appendix 5.1:

Title of Project: Social media usage and attentional bias to body image cues.

Participant information sheet

The study

This researcher of this study is Rumi Ansari, who is using this experiment as a part of her Level 6 Psychology dissertation topic. This experiment will measure social media usage and see how this influences attentional bias to body image cues. This sheet will inform you of what this study entails and what is required from the participant.

What would happen if you agree to participate?

If you agree to participate, you will complete a social media usage questionnaire which will then be followed by a visual dot probe task which will measure your attentional bias to body image cues. The study should take no longer than 35 minutes.

Exclusion criteria

You must be 18 to participate with no history (or currently) of an eating disorder. Participants cannot take part if they are dieting.

Potential Risk

You will be exposed to words which relate to body image and may cause some distress. You may want to know the results of the social media questionnaire and attentional bias score, however these are not allowed to be discussed.

Potential benefits
Your data will be used in the researcher’s dissertation project which will benefit them
tremendously as they are able to expand research into social media and attentional bias to
body image.
If you are a psychology student participating in this study, you will gain experience in taking
part as well as gaining 3 credits.

Withdrawal, anonymity and confidentiality

Once you have participated in this study, all your data will be kept anonymous as you will be
given a participant number for identification instead of your name. The data will be kept on a
password protected computer which will only be accessible by the researcher.

For any reason you feel as though you want to withdraw during the study or even after, you
are able to by sending an email with your participant number and your data will be
withdrawn. However, withdrawing data after completing the study must be done within 14
days of participating. After this, data will be analysed and used for research.

If you have any questions about the study, please contact:
Rumi Ansari via email: r.ansari2@cardiffmet.ac.uk

PARTICIPANT CONSENT FORM

Reference Number:
Participant name or Study ID Number:
Title of Project: Does social media influence attentional bias to body image cues?
Name of Researcher:

Participant to complete this section: Please initial each box.
1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time before leaving the experiment, without giving any reason.

3. I agree to take part in the above study.

4. I agree that I have no current (or any history of) eating disorders. I am also not currently dieting.

_______________________________________   ___________________  
Signature of Participant  Date

_______________________________________  ___________________  
Name of person taking consent  Date

_______________________________________  
Signature of person taking consent  


Appendix 5.2:

Debrief Sheet

Firstly, I would like to thank you for taking time to participate in this study.

This study measured social media usage to explore how it influences attentional bias to body image. Social media has been linked to individuals displaying body dissatisfaction (Haas et al, 2012) and individuals with body dissatisfaction display attentional bias to body image information. There has been a selection of research using clinical patients who have displayed attentional bias to body image information, specifically in females (Maner et al, 2006; Pinhas et al, 2004).

When it comes to measuring attentional bias, the visual dot probe task has been described to be a more direct measure than other methods.

This study aimed to expand research by using non-clinic female participants to measure attentional bias (via a visual dot probe task) to body image cues. Social media usage is measured to discover any statistical differences.

If you feel like you have been affected by any part of the study or want any further support on body image then there are resources available:

- The university provides counselling and support services so please do not hesitate to approach them
- SEED is charity aimed to provide support for individuals suffering with eating disorders. Their website offers advice and information as well as a helpline, should you feel like you need to talk to someone. www.seedeatingdisorders.org.uk

Your right to withdraw ends on ___/__/__ and your participant number is ______.

Thank you for participating,
Appendix 5.3:

Social Media Usage 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

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, skip to next question.

   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 2-3 hours per day

5. 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
6. 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></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>21. Post a photo*</td>
<td></td>
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<tr>
<td>22. Post a status update</td>
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<tr>
<td>23. Post a link to a news story, video, Web site, etc.</td>
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<tr>
<td>24. View friends’ photos that they’ve added of you*</td>
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<tr>
<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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<tr>
<td>28. Comment on friends’ photos*</td>
<td></td>
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<td></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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<td>31. Tag yourself in friends’ photos*</td>
<td></td>
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</tr>
<tr>
<td>32. Untag yourself in friends’ photos*</td>
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</tr>
</tbody>
</table>

7. Do you have an active Instagram account?

Yes/No

*If you answered yes to question 3, please continue on to the next question. If you answered no, skip to next question.*

8. Approximately how long have you had an active Instagram account?

__________________________

9. 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.

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

f). More than 2-3 hours per day

10. Your current Instagram 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

11. 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>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>44. Send/receive private images</td>
<td></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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<td></td>
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<tr>
<td>47. View friends’ photos that they’ve added of you*</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>48. View friends’ photos of themselves*</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<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>

12. Do you have an active Twitter account?  
   Yes/No

* If you answered yes to question 3, please continue on to the next question. If you answered no, skip to next question.

13. Approximately how long have you had an active Twitter account?  
   ____________
14. In a typical week, how frequently do you use Twitter (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 2-3 hours per day

15. Your current Twitter 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

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

<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>54. Tweet a photo</td>
<td></td>
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<tr>
<td>55. Tweet a photo of yourself*</td>
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</tr>
<tr>
<td>56. View friends' photos of themselves*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>57. View images on fitness accounts*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>58. Comment on friends' photos*</td>
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</tr>
</tbody>
</table>

Appendix 5.4: Visual dot probe task word list.

<table>
<thead>
<tr>
<th>Fat stimuli</th>
<th>Fat neutral</th>
</tr>
</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></td>
<td>Gigantic</td>
</tr>
<tr>
<td>---</td>
<td>------------</td>
</tr>
<tr>
<td>5</td>
<td>Flabby</td>
</tr>
<tr>
<td></td>
<td><strong>Thin Stimuli</strong></td>
</tr>
<tr>
<td>1</td>
<td>Bony</td>
</tr>
<tr>
<td>2</td>
<td>Skeletal</td>
</tr>
<tr>
<td>3</td>
<td>Undersized</td>
</tr>
<tr>
<td>4</td>
<td>Toned</td>
</tr>
</tbody>
</table>
Word Count Declaration

Abstract: 258

Introduction: 2357
Methodology: 1039
Results: 296
Discussion: 1873

Total: 5565

Signed: ___________________________

Date: 20/04/2018