Instagram use and eating attitudes and behaviours amongst South African female adolescents

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Abstract

Research in the past few decades suggests that eating disorders and their symptoms are becoming increasingly prevalent in South Africa and around the world. Simultaneously, social media has become exponentially more popular among adolescents and young adults. This study aimed to examine the relationship between Instagram use and body satisfaction amongst female adolescents in South Africa. More specifically, it looked at the associations between the amount of time spent on Instagram, the type of Instagram use (passive consumption, directed communication and broadcasting), the personal importance attributed to Instagram features (receiving likes, comments and followers) and eating attitudes and behaviours. The sample consisted of 51 grade 10 and 11 students (aged 15-17) from two girls' high schools in Cape Town. Participants completed a survey containing questions about their demographic information and Instagram use, as well as the Eating Attitudes Test-26 (EAT-26). Hierarchical linear multiple regression analyses, controlling for school, age, and race, indicated that greater eating disorder symptomatology was associated with spending more time on Instagram ($p<.01$) and assigning more importance to the number of Instagram followers ($p<.01$). No associations were found between the type of Instagram use (passive consumption, directed communication and broadcasting), or the personal importance attributed to receiving likes and comments and eating attitudes and behaviours. While the results of this study do not establish causality, they support theoretical arguments that Instagram may negatively influence body satisfaction amongst South African adolescent females, by reinforcing unrealistic body standards and encouraging greater social comparison.

Keywords: adolescents; body dissatisfaction, disordered eating, Instagram, social media, South Africa

There is widespread consensus among researchers that mass media has played a role in the global rise of eating disorders in young women (Ferguson, Muñoz, Garza, & Galindo, 2014; López-Guimerà, Levine, Sánchez-Carracedo, & Fauquet, 2010). In the past fifteen years, the advent of social media has sparked new questions surrounding how sites such as Facebook, Instagram and Twitter contribute to the so-called epidemic of body dissatisfaction (Walker et al., 2015). Most of the current research looking at this relationship originates from western countries and to date, no studies have been conducted in South Africa. Compared to both western and non-western populations, young South African women score highly on measures that assess the level of negative eating attitudes (Makino, Tsuboi, & Dennerstein, 2004; Szabo & Hollands, 1997). Recent statistics also highlight that social networking sites are becoming exponentially more popular in South Africa, with a 15% increase in the number of overall users between 2016 and 2017 alone (Qwerty, 2017). The number of Instagram users more than doubled over this period, with the largest proportion of users being young females (NapoleonCat, 2017; Snyman, 2016). The increase in prevalence rates of eating pathologies in young South African females and the sudden rise in social media activity, coupled with the lack of existing literature around this topic, highlights the need for further research.

Prevalence of Eating Disorders in South Africa

Traditionally, the drive for thinness has been associated with western ideals of beauty (Szabo & Allwood, 2004). Eating disorders, which are intricately linked to body image insecurities and body dissatisfaction, have been viewed as pathologies exclusively for young white women with high socioeconomic status (Barth & Starkman, 2016; Gitau, Micklesfield, Pettifor, & Norris, 2014; Le Grange, Louw, Breen, & Katzman, 2004). Non-western individuals were thought to be immune to disordered eating behaviours and have until recently been excluded from research within this field (Le Grange et al., 2004). However,

studies emerging from South Africa and other developing countries suggest that body dissatisfaction is becoming increasingly prevalent across racial and socio-economic divides (Makino et al., 2004; Wassenaar, Le Grange, Winship, & Lachenicht, 2000). Research has found that disordered eating attitudes and behaviours are as prominent within black female groups, as they are within white female groups (Le Grange, Louw, Russell, Nel, & Silkstone, 2006; Morris & Szabo, 2013).

Makino et al. (2004) completed a meta-analysis, comparing prevalence rates of abnormal eating attitudes and behaviours in western countries (like the United States of America (USA) and many European countries) and non-western countries (including, African, Middle Eastern and Asian countries). Tools such as the Eating Attitudes Test-26 (EAT-26) (Garner, Olmsted, Bohr, & Garfinkel, 1982) have been used in a number of studies to assess the degree of abnormal eating attitudes. Makino et al. (2004) reported that 8.3% - 26% of females in western countries and 0.8% - 39% of females in non-western countries had high EAT-26 scores. A pioneering South African study included in the meta-analysis, found that 21.7% of the sample scored highly on the EAT-26 measure. This indicates that the South African population falls among some of the highest global scorers of abnormal eating attitudes (Szabo & Hollands, 1997). Another study examining body shape concerns among South African schoolgirls found that the sample of participants reported significantly higher levels of body dissatisfaction, compared to other nations worldwide (Caradas, Lambert, & Charlton, 2001). Research also shows that there has been a steady increase in the number of people hospitalised in South Africa for eating disorders since the 1970s (Szabo & Allwood, 2004).

Le Grange et al. (2004) argued that the rise in prevalence of unhealthy eating attitudes and behaviours in South Africa might be linked to the increased contact with western media since the collapse of apartheid in 1994. For example, the freedom of movement laws allowed

black South Africans to live in cities, increasing their access to western media, including images of the "ideal" western female body (Le Grange et al., 2004; Morris & Szabo, 2013). Exposure to these images now extends beyond magazine pages, bulletin boards, television and films. Social media platforms enable individuals to view the "perfect" body image wherever they are, with a touch of a button (Ferguson et al., 2014).

Influence of social media on negative eating attitudes

Social media can be defined as online communication platforms through which users share information, personal experiences and photographs (photos) with a virtual community (Sobaih, Moustafa, Ghandforoush, & Khan, 2016). The most common social media sites in South Africa include Facebook, Instagram, Twitter and YouTube (Snyman, 2016). According to a study of internet use in South Africa, the number of Facebook users increased by 8%, while Instagram users increased by 133%, between 2015 and 2016 (Snyman, 2016). Instagram is a photo and video sharing social media app, which allows users to create an online profile and interact with other users they "follow", by "liking" and commenting on photos or sending private messages. The number of "likes" and comments is displayed under each photo and the number of followers is visible on the user's individual profile (Tiggemann, Hayden, Brown, & Veldhuis, 2018). Instagram is quickly becoming the most popular social media network among younger audiences, with 41% of its users aged between 13-24 years (Duggan & Brenner, 2013; NapoleonCat, 2017). It has also been found that this age group (mid-to late adolescence and early adulthood) is the peak period of risk for developing eating disorder symptoms, as it is a time of increased self-awareness and critical self-evaluation (Culbert, Racine, & Klump, 2015; Szabo & Allwood, 2004).

Since the 1960s, the weights and body measurements of the women portrayed in mass media have radically decreased, and within the same time frame, global prevalence rates of eating disorders have doubled (Cohen, 2006; Reaves, 2011). While the long-term effects of

social media on eating pathology are not yet known, a small body of emerging research has shown that the rise of social media sites in the last fifteen years has exacerbated an already existing culture of body image shame and scrutiny (Barth & Starkman, 2016; Tiggemann, et al., 2018). The literature exposes social media as having a detrimental effect on individuals' body image perceptions, leaving its primary users at risk of body image insecurities, and potential symptoms of eating disorders (Mabe, Forney, & Keel, 2014). Unsurprisingly, photo-based activities on social media, such as posting photos or viewing other users' posts have been shown to have the greatest negative effect on body dissatisfaction, compared to other activities, like private messaging (Holland & Tiggemann, 2016; Tiggemann, et al., 2018).

Social media may directly endorse eating disorder behaviours, through online communities like "pro-ana" groups or pages called "thinspiration" that encourage and normalise eating pathologies (Branley & Covey, 2017; Boepple & Thompson, 2016). These online communities typically glorify and romanticise anorexia nervosa, by sharing photos of skeletal frames that are deemed beautiful or providing "tips" on how to become anorexic (Branley & Covey, 2017). Emerging studies have shown that visiting pro-ana pages is linked to negative body image thoughts in vulnerable individuals (Branley & Covey, 2017; Boepple & Thompson, 2016; Custers, 2015). Ging and Garvey (2018) claim that compared to other social media platforms, pro-ana accounts on Instagram are particularly difficult for authorities to monitor, due to the use of image cross-tagging. Researchers suggest that the alarmingly high number of pro-ana photos on Instagram creates the impression that extreme thinness is both normative and a sign of success (Custers, 2015; Ging & Garvey, 2018). This may be particularly pernicious for vulnerable adolescents trying to fit into peer norms (Perloff, 2014).

While individuals who post pro-ana content encourage eating pathologies in a very intentional way, other social media users do so indirectly. Social media is a space for users to compare themselves to both "fictional" media characters, as well as their peers (Ferguson et al., 2014). Research suggests that social comparisons, and peer pressure to attain a certain body standard, are among the leading predictors for eating pathology amongst adolescent females (Ferguson et al., 2014; Walker et al., 2015). Social media users adhere to unrealistic beauty standards by carefully selecting and digitally altering their photos, creating the highly constructed impression of the "perfect life" and the "perfect body" (Mabe et al., 2014). Instant feedback through comments, likes, number of "friends" and followers, reinforces this false ideal, which contributes to the competition (Ging & Garvey, 2018; Mabe et al., 2014; Tiggemann & Slater, 2013). Ferguson et al. (2014) claim that peers' photos on social media are likely to have a greater negative effect on adolescents' body confidence than celebrity images, as peers pose a "real-life competition".

Tiggemann and Slater (2013) conducted a study with young high school girls in Australia, looking at the correlation between the amount of time spent on Facebook and the level of body dissatisfaction. The results clearly indicated that increased time spent on Facebook was associated with a greater drive for thinness. Mabe et al. (2014) reported comparable results using a large sample of university females in the USA. The authors also found that increased visible presence on social media as well as higher levels of importance placed on Facebook content (e.g receiving likes, comments on posts or having more friends) were correlated with disordered eating attitudes (Mabe et al., 2014). Similar findings are emerging from a small body of research examining Instagram behaviours, primarily conducted with female undergraduate students in Australia. For example, Brown and Tiggemann (2016) found that greater exposure to attractive celebrity images on Instagram increased ratings of body dissatisfaction and negative mood. Similarly, Fardouly, Willburger

and Vartanian (2018) concluded that there was a positive correlation between overall Instagram use and self-objectification. The researchers also suggested that viewing more images of fitness models, in an Instagram trend dubbed “fitspiration”, was linked to higher levels of body insecurity (Fardouly et al., 2018). Another recent study reported that greater investment in receiving likes on Instagram was positively associated with social comparison and negative self-evaluations (Tiggemann et al., 2018).

However, Walker et al. (2015) suggest that not all interactions on social media may be detrimental to individuals’ body image. Using a Facebook intensity scale, the researchers compared American university students’ emotional dependence on Facebook and their reported disordered eating behaviours. Surprisingly, higher Facebook intensity scores were negatively associated with disordered eating (Walker et al., 2015). The researchers suggest that the type of peer interactions, motives behind the interactions and feedback from these interactions are important when considering social media use. For example, greater Facebook intensity might result in more emotional support from other online users, which reduces peer competition and in turn, lessens displays of disordered eating (Walker et al., 2015). Burke, Kraut, and Marlow (2011) distinguished between three types of interactions on social media: directed communication, passive consumption and broadcasting. Directed communication consists of personal communication between friends, in the form of directed messages, comments on posts and liking social media content. Passive consumption occurs when users simply browse through others’ posts and broadcasting is the act of posting on social media.

A study looking at Facebook use and social capital, loosely defined as interpersonal relationships that enable effective functioning, found that increased directed communication behaviours were positively associated with social capital (Lee, Kim, & Ahn, 2014). Directed communication allows users the opportunity to connect with people and provide social support, which might contribute to improving mood and decreasing depressive symptoms

(Lee et al., 2014). By contrast, a longitudinal study looking at Instagram use and its correlation with adolescents' depressed mood, concluded that increased passive consumption on Instagram is associated with the development of greater depressed mood (Frison & Eggermont, 2017). It also found that individuals with higher initial scores of depressed mood were more likely to engage in broadcasting behaviours (Frison & Eggermont, 2017). There is a high comorbidity between eating disorders and depression (Santos, Richards, & Bleckley, 2007), raising the possibility that similar patterns may exist between Instagram use and eating disorders.

Limitations and gaps in the research

One study found that South African schoolgirls were significantly more concerned about body shape than other populations, in both western and non-western countries (Caradas et al., 2001). This suggests that the results from international studies about eating pathology and body dissatisfaction cannot be generalised to young South African women. There has been very little South African research into the correlates of disordered eating attitudes and behaviours, and no studies have examined the influence of social media. Outside South Africa, social media research has focused primarily on Facebook, with very few studies looking specifically at Instagram use (Tiggemann et al., 2018). Given the rise in prevalence of eating disorders amongst South African female adolescents and the concurrent increase in Instagram's popularity within this demographic, more research is needed to explore the potential relationship between eating pathologies and Instagram use. The present study intends to fill this gap.

Research Aim and Question

The aim of this study was to investigate the relationship between Instagram use among adolescent females and their eating attitudes and behaviours. In particular, this study intended to examine the associations between the amount of time spent on Instagram, the

type of Instagram use (passive consumption, directed communication and broadcasting), the value attached to Instagram features (receiving likes, comments and followers), and eating attitudes and behaviours. Drawing from previous research, the following research hypotheses were tested:

H1: The amount of time spent on Instagram will be positively correlated with attitudes and behaviours related to eating disorders.

H2: The type of Instagram use will be associated with attitudes and behaviours related to eating disorders. Specifically:

(a) Higher levels of passive consumption on Instagram will be positively correlated with attitudes and behaviours relating to eating disorders

(b) Higher levels of directed communication on Instagram will be negatively correlated with attitudes and behaviours relating to eating disorders

(c) Higher levels of broadcasting on Instagram will be positively correlated with attitudes and behaviours relating to eating disorders

H3: The level of importance assigned to Instagram features will be correlated with attitudes and behaviours related to eating disorders. Specifically:

(a) Greater value attached to receiving likes will be associated with attitudes and behaviours relating to eating disorders

(b) Greater value attached to receiving comments will be associated with attitudes and behaviours relating to eating disorders

(c) Greater value attached to the number of followers will be associated with attitudes and behaviours relating to eating disorders

Method

Design and Setting

The study employed a quantitative correlational research design. Data collection took place at two girls' high schools in Cape Town. Participants were given a pen and paper questionnaire (Appendix A) that measured their Instagram use and their eating attitudes and behaviours on a self-report basis. A correlational design was chosen as it is useful when examining variables that cannot be manipulated, such as attitudes toward certain Instagram features. Given the time and financial constraints of this study, survey research was appropriate, as surveys enable the collection of anonymous, personal data from a large sample of participants in a quick and cost-efficient manner. An additional advantage is that survey research allows for replication of the study to other sample groups (Cozby, 2009).

Participants

Sample characteristics. The study sample was drawn from grade 10 and 11 students at two girls' high schools in Cape Town, both located in the Metropolitan Central Education District. School A is an independent school, with a predominantly white student body, while School B is a public school, predominantly serving black African and coloured communities. Both schools A and B use English as their primary medium of instruction and offer the National Senior Certificate syllabus.

The study sample consisted of 51 female students, aged 15-17 (M = 16.51, SD =.58). This specific period in adolescence was chosen, as the age group contributes the largest proportion of Instagram users (Duggan & Brenner, 2013). Late adolescence is also a crucial period in the development of eating disorders (Culbert et al., 2015). The study was limited to female participants, as women are both more likely to develop eating disorder symptoms and to use social networking sites (Perloff, 2014). School A contributed 33 learners (64.7%) and school B, 18 learners (35.3%). The sample consisted of 30 white students (58.8%), 9 black African students (17.6%), 9 coloured students (17.6%) and 3 Indian/Asian students (5.9%).

Sample size calculation. To determine the number of participants needed for this study, a G*Power (Version 3.1.9.2) calculation for linear multiple regression analyses was performed a priori. A standard α value of 0.05, a conventional power of 0.8 and a small to medium effect size (Cohen's $f^2 = .20$) was used (Faul, Erdfelder, Buchner, & Lang, 2009). This effect size was chosen as previous findings from social media and body dissatisfaction research have reported a range of small to medium effect sizes (Brown & Tiggemann, 2016; Fardouly et al., 2018; Mabe et al., 2014). As this study consisted of numerous regression models, a priori analysis was completed with the model that involved the highest number of predictor variables. Hence, since this model included 8 predictor variables, a minimum of 84 participants was advised. However, the low participation rate resulted in a sample size that was smaller than the target.

Sampling procedure. Purposive and convenience sampling techniques were adopted for this study. The schools (A and B) were chosen from an online schools directory, using the filters 'girls schools', 'Western Cape', 'Cape Town', and 'all suburbs'. After applying these filters, seven schools met all the specifications. All seven schools were contacted, two of which (A and B) consented to participate. All grade 10 and 11 students from both schools were invited to participate in this study. The total numbers of students in these grades were 200 and 180 at schools A and B respectively. Inclusion in the study was restricted to South African students aged 15-17, who had a signed consent form from their caregivers. As the study examined the relationship between Instagram use and eating attitudes and behaviours, only the data from the participants who circled 'yes' to the question, "Do you use a personal Instagram account?" were included. The original sample consisted of 56 students, from which 5 were excluded. Excluded participants were either not South African (n=3) or did not use a personal Instagram account (n=2). Hence, the sample represented only 13.4% of the combined population of grade 10 and 11 students from schools A and B.

Instruments

Demographic information. Information was collected from participants about their age, race and nationality.

Instagram use.

Time spent on Instagram. Participants were asked to respond to the question, "On average, how much overall time do you spend on Instagram per week?". The response options were 1= <1 hour, 2= 1 to <2 hours, 3= 2 to <4 hours, 4= 4 to <7 hours and 5= 7 hours or more. This item was adapted from a question posed to participants in a study examining eating pathologies and time spent on Facebook (Mabe et al., 2014).

Different types of Instagram use. Participants were asked three questions about how often they engage in three different types of Instagram behaviours. Firstly, "How often do you look at photos posted by others on Instagram?" (Passive consumption); secondly, "How often do you 'like' or comment on an Instagram photo?" (directed communication) and, "How often do you post a photo on Instagram?" (broadcasting). Participants were asked to respond by circling the appropriate number on a five-point Likert scale (1= never to 5= several times every day). These items were adapted from survey questions in a study investigating adolescents' Instagram use and depressed mood (Frison & Eggermont, 2017).

Importance of Instagram features. Three questions about the value placed on receiving likes, comments and followers on Instagram were included: "How important is it to you that people 'like' your photos on Instagram?, "How important is it to you that people comment on your photos on Instagram?" and "How important is the number of Instagram followers you have?". Responses ranged on a five-point scale from 'not at all' to 'extremely'. These items were adapted from a Facebook survey used by Mabe et al. (2014).

Eating Attitudes Test-26 (EAT-26). The EAT-26 is a 26 item self-report questionnaire measuring the presence of attitudes and behaviours related to eating disorders

(Garner et al., 1982). Individual items ask about restrictive behaviours, feelings of food guilt and obsessions with weight and food (Ferguson et al., 2014). Each item has six response options ranging from 'never' to 'always', with potential scores ranging from 0 to 78. Scores of 20 or higher indicate symptoms of abnormal eating attitudes and behaviours, reflecting increased risk for developing an eating disorder (Garner et al., 1982). The EAT-26 is a widely used scale and is particularly helpful as a screening tool for eating disorder symptoms, rather than as a diagnostic measure (Garner et al., 1982). The EAT-26 has been used successfully in a number of studies with young females within the South African context (Caradas et al., 2001; Le Grange et al., 2006; Szabo & Allwood, 2004). The validity and reliability of EAT-26 scores are consistently high (Le Grange et al., 2006). Significant correlations were found with factors like diet, weight and body dissatisfaction (Le Grange et al., 2006). It also has convergent validity with related measures, such as the Body Image Scale (r=0.43) (Koslowsky et al., 1992). It has good internal consistency, with Koslowsky et al. (1992) obtaining a Cronbach's coefficient alpha value of .83. The Cronbach's alpha value for this study was .89. Permission was granted to reproduce and use the EAT-26 (Appendix B).

Procedure

Before visiting the schools, a letter (Appendix C) was sent to the parents/caregivers of all the grade 10 and 11 students from schools A and B. This letter informed parents about the study, and included an informed consent form (Appendix D), which parents/caregivers were required to sign and return, in order for their child to participate. The two schools were visited on separate days during tutor periods. With the help of the school counsellor (School A) and the life orientation teacher (School B), the students who had obtained signed parental consent were taken to a separate venue and invited to participate in the study. Each student who wished to participate was required to sign her own assent form (Appendix E).

Completion of the survey took approximately 15 minutes. The participants were seated appropriately to ensure that they did not see or discuss each other's responses. Once all the completed surveys were collected, there was a short debriefing session.

Ethical Considerations

Approval to conduct the study was obtained from an Ethics Review Committee of the Faculty of Humanities at the University of Cape Town (Appendix F), the Western Cape Education Department (Appendix G), and both school principals. The parental consent (Appendix D) and student assent forms (Appendix E) provided a brief overview of the study's aims and an explanation of what participation in the study would entail. Both forms emphasised that participation was voluntary, that there would be no negative consequences should the student choose not to complete the survey, and that withdrawal from the study at any time would result in no penalty. The forms highlighted that the data would be kept strictly confidential. The surveys would be anonymous and completed sheets would be stored in a locked file cabinet and not disclosed to anybody. The data would be stored on a password-protected computer. This information was also verbally explained to the students.

Participation in this study involved minimal risk, defined as no more risk than would typically be encountered in everyday life. However, the nature of the EAT-26 items may have been sensitive for some students. Participants were given the contact details for easily accessible counselling services if any uncomfortable emotions arose while completing the questionnaire. My contact details, along with my supervisor's contact details, were also provided. A debriefing form with this information was given to each participant (Appendix H). There was also a brief opportunity for the students to raise any questions or concerns.

The study did not directly benefit the participants. Upon completion of the project, I will provide both schools with a summary of the research findings. It is my hope that the

schools will be able to use this information to spread awareness and understanding about eating disorders and social media.

Data analysis

All statistical analyses were completed on SPSS (version 25.0), using a set significance value of $p < .05$. Descriptive statistics of all the study variables, as well as the correlations between them were calculated. A series of multiple regression models were then run to test the study hypotheses. Amount of time spent on Instagram, type of Instagram use (directed communication, passive consumption and broadcasting) and importance of Instagram features (receiving likes, comments and followers) were the seven predictor variables. The criterion variable was the score on the EAT-26. When there are multiple predictor variables and a small sample size, there is a concern that the data may show a biased effect size (Field, 2009). To minimise this risk, separate regressions were run for each of the hypotheses and the non-significant predictor variables were excluded from the final model.

Hypothesis 1. A hierarchical multiple regression model was conducted to investigate the association between the amount of time spent on Instagram and the EAT scores, whilst controlling for school (0= School A, 1= School B), age and race. School was entered as a control variable as it was significantly associated with a number of the study variables in the correlational analyses. Age was controlled for, as compared to younger adolescents, older adolescents spend more time on social media and engage with the content differently (Gezgin, 2018). While an increasing body of research indicates that eating disorder pathology exists across racial groups, there is evidence to suggest that racial differences may occur in terms of symptom presentation and cultural meanings related to body dissatisfaction (Le Grange et al., 2006; Wassenaar et al., 2000). Hence, race was added as another control variable. Three dummy variables were coded for race, using ‘White’ as the baseline category,

as this group had the largest number of participants. These dummy variables were labelled 'Black vs White', 'Coloured vs White' and Indian/Asian vs White'. All control variables were entered as a block in the first step of the regression, and the amount of time spent on Instagram was entered at the second step.

Hypothesis 2. A hierarchical multiple regression model was used to examine the associations between the type of Instagram use (directed communication, passive consumption and broadcasting) and EAT scores, whilst controlling for school, age, and race. The control variables were entered in a block at the first step of the regression model, and the three types of Instagram use were entered as a block in the second step.

Hypothesis 3. A hierarchical multiple regression model was used to investigate the relationship between the importance of Instagram features (likes, comments and followers) and EAT scores, whilst controlling for school, age, and race. The control variables were entered in a block at the first step of the regression model, and the importance of the three Instagram features were entered as a block in the second step.

Final model. The first step of the final hierarchical multiple regression model included the control variables, entered as a block. Based on the findings of the previous three regression models, the significant predictor variables were entered separately in different steps. The predictor variables in the final model were entered in the order of increasing importance on the EAT scores, determined by the β values from the previous regression models.

One case within the data had an EAT score that fell outside three standard deviations from the mean. The four regressions were run with and without this outlier. The results produced the same statistical decisions and therefore the case was not removed. Furthermore, the Cook's distance was well below 1 and Mahalanobis distance fell within the bounds of expected values for multiple regression (Field, 2009). Besides a slight skew for EAT scores,

the distribution of standardised residuals for the predictor variables did not sufficiently deviate from normality. The assumption of linearity was upheld and no heteroscedasticity was evident. The Variance Inflation Factor and tolerance values suggested that there was no multicollinearity within the data.

Results

Descriptive Statistics

The descriptive statistics, including means, standard deviations and medians for the predictor and outcome variables, are presented in Table 1. Apparent from this table is that the mean and median EAT scores at School A were just above the cut-off for abnormal eating attitudes and behaviours (Garner et al., 1982). In addition, the mean and median EAT scores at School A were approximately double those of School B. Table 1 also suggests that passive consumption was the most frequently reported behaviour on Instagram and that the greatest importance was attached to likes.

Table 1

Descriptive statistics

	School A			*School B*			*Combined*		
Variables	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*
Time on Instagram	3.39	.97	3	2.56	1.25	3	3.10	1.14	3
Passive Consumption	4.12	.70	4	3.22	.89	3	3.80	.87	4
Directed Communication	3.55	.90	4	2.94	1.11	3	3.33	1.01	3
Broadcasting	2.82	.64	3	2.22	.94	2	2.61	.80	3
Importance of Likes	3.12	1.08	3	2.67	1.08	3	2.96	1.09	3
Importance of Comments	2.94	.90	3	1.78	1.00	1	2.53	1.08	3
Importance of Followers	2.97	.98	3	2.00	.84	2	2.63	1.04	3
EAT score	20.91	13.56	21	10.44	5.51	10	17.22	12.39	15
n		33			18			51	

Correlations

Table 2 provides a summary of the correlations between all variables. Participants from School B scored significantly lower on the EAT than participants from School A and reported significantly lower values on six of the seven predictor variables measuring Instagram use. Time on Instagram and importance of followers were strongly positively correlated with EAT scores. There were significant moderate positive correlations between EAT scores and passive consumption and the importance of comments, but no significant associations between EAT scores and directed communication, broadcasting or the importance of likes. There were some significant associations between the predictor variables, the largest of which was between the importance of comments and the importance of likes.

Hierarchical Multiple Regression Analyses

Four hierarchical multiple regression analyses were run, addressing each of the three hypotheses independently and then combining these findings into a final model.

Control variables. Step 1 was the same for each of the four regression models, as it included the control variables (school, age and race), which accounted for 23% of the variation in EAT scores, F (5,45) = 2.73, p=.03. Individually, none of the control variables was significantly associated with EAT scores.

Hypothesis 1.

After accounting for the control variables in step 1, time on Instagram (β = .44) explained a further 16% of the variance in EAT scores, F (1,44) = 11.66, p=.001. Therefore, the results provided support for hypothesis 1, showing that the more time spent on Instagram was significantly associated with disordered eating attitudes and behaviours.

Table 2

Correlations between EAT score, School, Age, Race, Amount of time on Instagram, the Types of Instagram use and Importance of Instagram Features (n=51)

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	EAT score	-												
2	School[a]	-.41**	-											
3	Age	.13	.20	-										
4	Black vs White	-.23	.52**	.04	-									
5	Coloured vs White	-.31*	.63**	.13	-.21	-								
6	Indian/Asian vs White	.06	-.01	.21	-.12	-.12	-							
7	Time on Instagram	.54**	-.36*	.07	-.27	-.18	.13	-						
8	Passive Consumption	.41**	-.49**	-.02	-.24	-.44**	.25	.43**	-					
9	Directed Communication	.08	-.29*	-.13	-.21	-.15	.17	.06	.40**	-				
10	Broadcasting	.10	-.36**	-.16	-.16	-.35*	.12	.11	.19	.31*	-			
11	Importance of Likes	.20	-.20	-.28*	-.22	.06	-.14	.07	.06	.21	.26	-		
12	Importance of Comments	.35*	-.52**	-.12	-.42**	-.08	.03	.38**	.13	.26	.34*	.54**	-	
13	Importance of Followers	.64**	-.45**	-.18	-.23	-.38**	.17	.44**	.42**	.29*	.16	.37**	.34*	-

[a] 0 = School A, 1 = School B

*p<.05 **p<.01

Hypothesis 2.

The results of the second step of the regression model testing hypothesis 2 are shown in Table 3. Controlling for the variables in step 1, the addition of passive consumption, directed communication and broadcasting did not explain additional variance in EAT scores. While there was a significant positive bivariate correlation between passive consumption and EAT scores (see Table 2), it failed to make a unique contribution to the multivariate model, (p = .09). Overall, the results did not provide support for hypotheses 2a, b or c, indicating that the type of Instagram use was not associated with attitudes and behaviours related to eating disorders. In other words, higher levels of passive consumption or broadcasting on Instagram were not significantly associated with higher EAT scores and higher levels of directed communication were not significantly associated with lower EAT scores.

Table 3

Hierarchical Multiple Regression analysis predicting EAT scores from control variables, passive consumption, directed communication and broadcasting

	EAT scores	
Predictor	ΔR^2	β
Step 2	.05	
Passive consumption		.28
Directed communication		-.07
Broadcasting		-.02
n	51	

Hypothesis 3.

Table 4 represents the results of step two of the regression model testing hypotheses 3a, b and c. After partialling out the effect of the control variables, the combination of variables entered in step 2 was significant and explained additional variance in EAT scores.

However, the β values suggest that the importance of likes and comments did not individually contribute to this additional variance. Although there was a significant positive bivariate correlation between the importance of comments and EAT scores (see Table 2), the association was not significant in the multivariate model. However, the importance of followers was a significant predictor in the model. The results therefore provide support for hypothesis 3c, but not for hypotheses 3a and b. Greater value attached to the number of followers on Instagram was significantly correlated with higher EAT scores.

Table 4

Hierarchical Multiple Regression analysis predicting EAT scores from control variables, the importance of likes and the importance of followers on Instagram

	EAT scores	
Predictor	ΔR^2	β
Step 2	.30**	
Importance of Likes		.08
Importance of Comments		.20
Importance of Followers		.62**
n		51

*p<.05

**p<.01

The Final Model.

Table 5 summarises the final three-step hierarchical multiple regression analysis. This final model consisted of the control variables and the significant predictors, time on Instagram and importance of followers. Time on Instagram was entered in the second step, and explained an additional 16% of variation in EAT scores. As the previous regressions found the importance of followers to have the largest effect on the change in variance of the

EAT scores, it was entered in the third step. Accounting for the variables in the previous steps, the importance of followers at step three explained a further 17% of the variance, $F(1,43) = 17.14$, $p<.001$. This indicates that greater value placed on the number of followers on Instagram was significantly independently associated with higher EAT scores. As a whole, the final model explained 57% of the variation in EAT scores.

Table 5

Hierarchical Multiple Regression analysis predicting EAT scores from control variables, Time on Instagram and the Importance of Followers

	EAT scores	
Predictor	ΔR^2	β
Step 1	.23*	
School[a]		-.09
Age		.21
Black vs White		-.28
Coloured vs White		-.35
Indian/Asian vs White		-.06
Step 2	.16**	
Time on Instagram		.44**
Step 3	.17**	
Importance of Followers		.52**
n	51	

[a] 0 = School A, 1 = School B

*p<.05

**p<.01

Discussion

This study examined the relationships between the amount of time spent on Instagram, different types of Instagram use, the personal importance attached to certain Instagram features, and eating attitudes and behaviours amongst South African female adolescents. It was predicted that spending more time on Instagram would be associated with attitudes and behaviours linked to eating disorders. Additionally, it was hypothesised that increased engagement in directed communication (through liking or commenting on Instagram posts) would be associated with fewer disordered eating attitudes and behaviours; while higher levels of passive consumption (through Instagram browsing) and broadcasting (active posting of photos) would be associated with more disordered eating attitudes and behaviours. Furthermore, greater investment in receiving likes, comments and followers on Instagram was expected to relate to attitudes and behaviours linked to eating disorders.

First, the findings from the study supported a positive association between the amount of time spent on Instagram and eating disorder symptomatology. These results are in line with those of a number of studies that have found associations between the frequency of social media use and indices of body dissatisfaction and disordered eating behaviours (Fardouly et al., 2018; Holland & Tiggemann, 2016; Tiggemann & Slater, 2013). One possible explanation for this relationship is that the more time individuals spend on Instagram, the more engagement they have with portrayals of unrealistic beauty standards. This is due in part to the app's editing features, which allow users to digitally alter their photos and curate their ideal image. It is also symptomatic of the tendency to only post aesthetically pleasing photos with the best lighting and most flattering angles, in order to construct the impression of the perfect life and the perfect body (Mabe et al., 2014; Verduyn et al., 2015). Increased exposure to these images is likely to lead to greater internalisation of these ideals, self-objectification and body surveillance, through online social comparisons

and the pressure for one's Instagram persona to meet a certain appearance standard (Holland & Tiggemann, 2016). This is compounded by the fact that many of the images on young people's Instagram feeds, are peers' photos, which have been shown to have a greater impact on levels of body dissatisfaction, compared to images of famous personalities, as peers pose more competition (Ferguson et al., 2014).

Second, after controlling for school, age and race, the results from this study indicated that there was no association between the type of Instagram use (directed communication, passive consumption and broadcasting) and disordered eating attitudes and behaviours. Perhaps the most surprising of these results were the findings relating to passive consumption, as this type of behaviour has repeatedly been shown to have a negative effect on self-evaluation (Frison & Eggermont, 2017; Holland & Tiggemann, 2016; Verduyn et al., 2015). Browsing behaviours on social media have been found to reinforce the internalisation of the unrealistic beauty standard (Frison & Eggermont, 2017). In turn, this has been shown to stimulate negative social comparisons, leading to increased body insecurity (Frison & Eggermont, 2017; Holland & Tiggemann, 2016; Verduyn et al., 2015). Correlational analyses indicated that there was a significant positive correlation between browsing behaviours on Instagram and scores on the EAT, yet it was not a significant independent predictor of EAT scores in the regression analyses. As the sample size of this study was smaller than the target sample size, it is likely that the sample may be underpowered, which raises the possibility that a Type II error may exist in relation to passive consumption. The ambiguity of these findings highlights the need for further research in this area.

Both the correlational and regression analyses showed that broadcasting and directed communications had almost no correlation with EAT scores. While the findings contrast with the evidence from previous research of social media use and the maintenance of depressive symptoms (Frison & Eggermont, 2017; Lee et al., 2014), the unexpected results may suggest

that these behaviours have less of an effect on eating disorder symptomatology than on depression. For example, it may be speculated that the potential negative effects of posting photos on Instagram may be counteracted to a certain extent by the positive reinforcement received from likes and comments (Ging & Garvey, 2018). Individuals with body image insecurities may deliberately post images to receive positive affirmation, which in turn boosts their body confidence and self-esteem. Additionally, Lee et al. (2014) proposed that directed communication may help individuals feel more supported and connected to people, by minimising feelings of loneliness. However, the non-significant results from this study indicate that this may not be enough to have an effect on levels of body satisfaction.

Last, the findings from this study do not support an association between personal investment in receiving likes or comments on photos and disordered eating attitudes and behaviours, which contradicts the results from similar studies (Mabe et al., 2014; Tiggemann et al., 2018). Most of the research in this area has involved samples of young adult women at universities. It is possible that different meanings are attached to likes and comments on Instagram for adolescent females, compared to young adults. A study from Korea (Jang, Han, Shih, & Lee, 2015) revealed that adolescents (aged 13-19) like and comment on Instagram posts more frequently than young adults (aged 25-39). Hence, it may be that older Instagram users are more discerning in their liking and commenting behaviours and therefore assign greater value to the feedback they receive on their own photos as they recognise the selective nature of these behaviours. By contrast, it is possible that adolescents regard liking and commenting on posts as normal behaviours of Instagram participation and therefore place less value on them.

However, the importance assigned to the number of followers was significantly associated with disordered eating attitudes and behaviours, even after controlling for the amount of time spent on Instagram. This supports the results from Tiggemann and Slater’s

(2013) study, which found an association between the number of Facebook friends and the drive for thinness. While the number of likes and comments are presented under each photo on Instagram, they can only be viewed by directly selecting the particular post. In contrast, the number of followers is very publically displayed on the user's Instagram profile. The number of followers becomes a marker of social capital and a symbol of popularity. Adolescence is a period during which individuals become increasingly involved with their peer group and approval from friends becomes more important (Cicchetti & Rogosch, 2002). Hence, the pressure to gain approval from others may be represented by the pressure to gain followers on Instagram, corresponding with greater investment in the number of followers. This pressure is likely to translate into social comparisons and the desire to meet a certain peer-approved image, which have been identified as significant predictors for eating disorders amongst adolescents (Ferguson et al., 2014; Walker et al., 2015).

Although not the primary focus of this study, of particular concern, was that the mean and median EAT scores at School A (an independent girls' school) were slightly above the cut-off point for abnormal eating attitudes and behaviours (Garner et al., 1982). This suggests that there is a high prevalence of eating disorder symptomatology at the school. It was also found that the EAT scores from School A were almost double those from the public school (School B). Participants at School B also reported significantly lower scores on six of the seven Instagram use variables. The disparity between the schools may have arisen for a variety of reasons. First, the number of participants from School A (n=33) was almost double the sample from School B (n=18). Hence, sample bias may have been an issue. While the bivariate correlations suggested that coloured students had lower EAT scores compared to white students, the regression results indicated no significant association between race and eating disorder symptomatology. It is possible that differing norms regarding Instagram use

may have influenced the results. Alternatively, socio-economic factors, including access to the Internet or smartphones, may have contributed to the discrepancies.

Study Limitations and recommendations

This study has several limitations that are important to address in future research. One limitation was the small sample size, which raises the possibility of making a Type II error. Future studies should therefore include larger samples. The very low response rate at the participating schools was likely due to the logistical burden of returning parental consenting forms within a certain time period, lack of interest in the study or forgetfulness. It is also possible that some individuals displaying more symptoms of eating disorders deliberately chose to refrain from participating from fear of exposure, due to the shame and secrecy associated with eating disorders (Striegel-Moore & Bulik, 2007). Alternatively, the low participation rate may be indicative of the lack of mental health literacy in South Africa (Hugo, Boshoff, Traut, Zungu-Dirwayi, & Stein, 2003).

A second limitation of this study is linked to the methods of convenience sampling. Due to financial and time restraints, only girls' schools in Cape Town were approached. A low response rate from the seven schools approached further reduced the pool of eligible participants. For these reasons, the study sample was unrepresentative of the population of female adolescents in South Africa. To enhance the generalizability of the findings, future research should recruit a more representative and diverse sample.

A third limitation of this study is due to the fact that the data relied solely on adolescents' self-reports of their Instagram use as well as their eating attitudes and behaviours. While the self-report survey method is a practical way of collecting personal data that cannot be easily manipulated, it also raises the risk of response bias (Brown & Tiggemann, 2016; Cozby, 2009). Additionally, some of the questionnaire items relating to time spent on Instagram or frequency of engagement in Instagram behaviours may have been

difficult for participants to quantify, leading to unintended inaccuracies. Furthermore, the secrecy linked to disordered eating may have led individuals to respond untruthfully (Striegel-Moore & Bulik, 2007). Future studies could be improved by supplementing adolescent self-reports with parental reports of their eating attitudes and behaviours as well as more definitive measures of adolescents' Instagram use, provided by social media databases.

A fourth limitation is that the study adopted a correlational design, making it impossible to establish any claims of causality. The direction of the relationships between the study variables cannot be determined. For example, spending more time on Instagram may trigger more disordered eating attitudes and behaviours. However, it is also likely that adolescents with disordered eating attitudes and behaviours may choose to spend more time on Instagram. There is also the possibility that these variables influence one another bidirectionally. Alternatively, the possibility of third variables cannot be eliminated. For instance, adolescents who place higher value on peer-group status and popularity may be more likely to assign greater importance to the number of Instagram followers, which in turn may influence disordered eating attitudes and behaviours. Future research using longitudinal designs might help to clarify the direction of these effects.

Additional limitations of this study relate to the Instagram questionnaire items. For example, single-item questions were used to assess the different types of Instagram use. Future studies should consider using multi-item measures to assess these behaviours, to improve the validity of the questionnaire (Frison & Eggermont, 2017). The questions also did not make distinctions between body-image related photos on Instagram and more neutral photos, like landscapes. Brown and Tiggemann (2016) reported that there are differences between how Instagram users respond to attractive celebrity images compared to photos of travel destinations. Hence, future research ought to make this distinction clear.

Conclusion

Despite a number of limitations, this study contributed to the vastly under-researched body of knowledge about social media and body dissatisfaction amongst adolescent females in South Africa. The findings indicated that increased time spent on Instagram, together with greater investment in the number of Instagram followers, were significantly associated with attitudes and behaviours relating to eating disorders. Variance in eating attitudes and behaviours were not explained by the type of Instagram use (passive consumption, directed communication and broadcasting), or by the personal importance attributed to receiving likes and comments. While inferences about causality should be made with caution, the results of this study raise the possibility that Instagram may negatively influence body satisfaction amongst South African adolescent females by reinforcing unrealistic body standards and encouraging greater social comparison.

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Appendix A

Pen and paper questionnaire to participants

Body Confidence and Social Media Questionnaire

Age: _____

Race: Black ☐ Coloured ☐ Indian/Asian ☐ White ☐

Nationality: South African ☐ Other ☐

1. Do you use a personal Instagram account?
   1) Yes
   2) No

1. If yes, on average, how much overall time do you spend on Instagram per week?
   1) Less than 1 hour
   2) 1-2 hours
   3) 2 - 4 hours
   4) 4 - 7 hours
   5) 7 hours or more

2. How often do you look at photos posted by others on Instagram?
   1) Never
   2) Rarely
   3) Sometimes
   4) Often
   5) Very often

3. How often do you 'like' or comment on an Instagram photo?
   1) Never
   2) Rarely
   3) Sometimes
   4) Often
   5) Very often

4. How often do you post a photo on Instagram?
   1) Never
   2) Rarely
   3) Sometimes
   4) Often
   5) Very often

5. How important is it to you to you that people 'like' your photos on Instagram?
   1) Not at all
   2) Somewhat
   3) Moderately
   4) Very
   5) Extremely

6. How important is it to you that people comment on your photos on Instagram?
   1) Not at all
   2) Somewhat
   3) Moderately
   4) Very
   5) Extremely

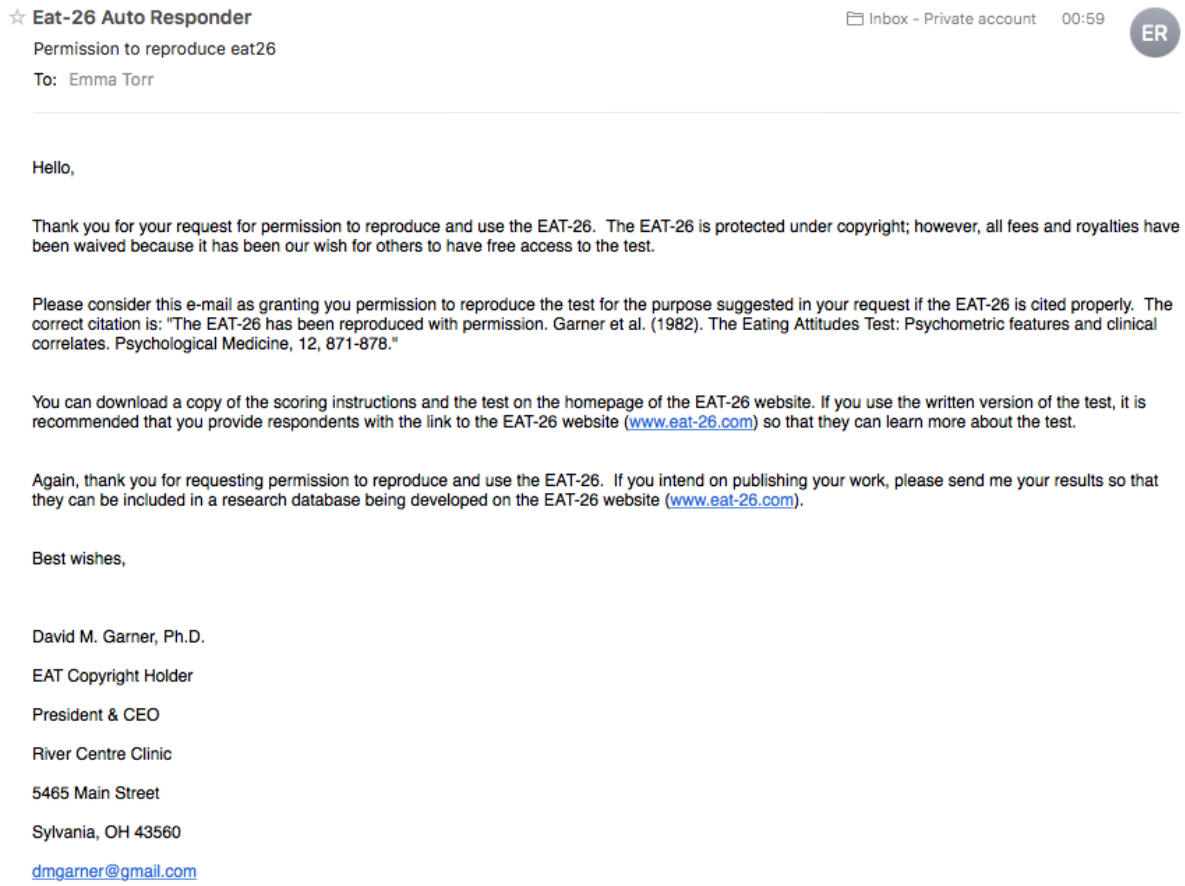
7. How important is the number of Instagram followers you have?
   1) Not at all
   2) Somewhat
   3) Moderately
   4) Very
   5) Extremely

Check a response for each of the following statements:	Always	Usually	Often	Some times	Rarely	Never
1. Am terrified about being overweight.	☐	☐	☐	☐	☐	☐
2. Avoid eating when I am hungry.	☐	☐	☐	☐	☐	☐
3. Find myself preoccupied with food.	☐	☐	☐	☐	☐	☐
4. Have gone on eating binges where I feel that I may not be able to stop.	☐	☐	☐	☐	☐	☐
5. Cut my food into small pieces.	☐	☐	☐	☐	☐	☐
6. Aware of the calorie content of foods that I eat.	☐	☐	☐	☐	☐	☐
7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	☐	☐	☐	☐	☐	☐
8. Feel that others would prefer if I ate more.	☐	☐	☐	☐	☐	☐
9. Vomit after I have eaten.	☐	☐	☐	☐	☐	☐
10. Feel extremely guilty after eating.	☐	☐	☐	☐	☐	☐
11. Am preoccupied with a desire to be thinner.	☐	☐	☐	☐	☐	☐
12. Think about burning up calories when I exercise.	☐	☐	☐	☐	☐	☐
13. Other people think that I am too thin.	☐	☐	☐	☐	☐	☐
14. Am preoccupied with the thought of having fat on my body.	☐	☐	☐	☐	☐	☐
15. Take longer than others to eat my meals.	☐	☐	☐	☐	☐	☐
16. Avoid foods with sugar in them.	☐	☐	☐	☐	☐	☐
17. Eat diet foods.	☐	☐	☐	☐	☐	☐
18. Feel that food controls my life.	☐	☐	☐	☐	☐	☐
19. Display self-control around food.	☐	☐	☐	☐	☐	☐
20. Feel that others pressure me to eat.	☐	☐	☐	☐	☐	☐
21. Give too much time and thought to food.	☐	☐	☐	☐	☐	☐
22. Feel uncomfortable after eating sweets.	☐	☐	☐	☐	☐	☐
23. Engage in dieting behaviour.	☐	☐	☐	☐	☐	☐
24. Like my stomach to be empty.	☐	☐	☐	☐	☐	☐
25. Have the impulse to vomit after meals.	☐	☐	☐	☐	☐	☐
26. Enjoy trying new rich foods.	☐	☐	☐	☐	☐	☐

Thank you for completing this questionnaire!

Appendix B

Email of approval for using EAT-26



☆ **Eat-26 Auto Responder** Inbox - Private account 00:59 ER

Permission to reproduce eat26

To: Emma Torr

Hello,

Thank you for your request for permission to reproduce and use the EAT-26. The EAT-26 is protected under copyright; however, all fees and royalties have been waived because it has been our wish for others to have free access to the test.

Please consider this e-mail as granting you permission to reproduce the test for the purpose suggested in your request if the EAT-26 is cited properly. The correct citation is: "The EAT-26 has been reproduced with permission. Garner et al. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. Psychological Medicine, 12, 871-878."

You can download a copy of the scoring instructions and the test on the homepage of the EAT-26 website. If you use the written version of the test, it is recommended that you provide respondents with the link to the EAT-26 website (www.eat-26.com) so that they can learn more about the test.

Again, thank you for requesting permission to reproduce and use the EAT-26. If you intend on publishing your work, please send me your results so that they can be included in a research database being developed on the EAT-26 website (www.eat-26.com).

Best wishes,

David M. Garner, Ph.D.

EAT Copyright Holder

President & CEO

River Centre Clinic

5465 Main Street

Sylvania, OH 43560

dmgarner@gmail.com

Appendix C

Letter to parents, providing information about the study

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 9111
Fax No. (021) 650 4104

Dear parents and guardians of Grade 10 and 11 students,

My name is Emma Torr and I am a psychology Honours student at the University of Cape Town, currently undertaking my dissertation. The title of my thesis is: "**Instagram and eating attitudes and behaviours in South African female adolescents**".

Research in the last fifty years highlights that eating disorders are becoming increasingly prevalent among young South African women, across racial and cultural divides. Mass media and celebrity culture receive a lot of the blame for this increase, but in the last fifteen years, with the advent of social media, new questions have arisen around how sites such as Facebook, Instagram and Twitter contribute to the so-called 'epidemic' of body dissatisfaction. Instagram is a photo sharing social networking site, which has become exponentially popular among South African adolescents in the last few years. The nature of the site allows users to adhere to unrealistic beauty standards by carefully selecting and digitally altering their photos, creating the highly constructed impression of the 'perfect life' and the 'perfect body'. Emerging research from the United States suggests that this unrealistic peer comparison of photos on social media is likely to have a negative effect on adolescents' body confidence. To date there has been no study conducted in South Africa looking at the role of social media on body dissatisfaction.

My study is looking at how young South African women use Instagram and the potential impact this may have on their body satisfaction. I would like to invite your daughter to participate in this research project. Participation would involve completing a pen and paper questionnaire during one of the life orientation periods. The questionnaire will require your daughter to respond to questions about her Instagram behaviours and her body satisfaction. Your daughter's responses and any identifying information will be

kept strictly confidential and anonymous. One other high school in Cape Town will also be participating.

If you agree that your daughter may participate in this study, you will be required to give permission by signing the consent form attached to this email before the (date). Signing this consent form does not mean that your daughter will have to participate in the study. Participation is voluntary and your daughter will be able to choose whether or not she wants to take part.

Thank you for considering my request and please do not hesitate to contact me or my supervisor, Dr. Wild, should you require further information.

Kind regards,

Emma Torr
Honours Psychology Student
Cell: 076 5599 310
Email: emmatorr96@gmail.com

Dr. Lauren Wild
Research Supervisor
Tel: (021) 650 4607
Email: lauren.wild@uct.ac.za

Appendix D

Parent/Guardian Informed Consent Form

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF PSYCHOLOGY

Body confidence and social media

Invitation and purpose

Your daughter is invited to participate in a study investigating the role of Instagram use on body satisfaction among adolescents. I am an Honours student from the Department of Psychology at the University of Cape Town.

Study procedures

Participation in the study will involve completing a written questionnaire, consisting of basic demographic information, followed by 33 questions about your daughter's Instagram behaviours and her body satisfaction. The questionnaires will be administered to the students during one of their life orientation periods. Permission has been granted by the principal and class teacher, as well as by the Western Cape Education Department,

Possible risks

This study involves no more risk of harm than would typically be encountered in everyday life. There is a possibility that some of the questions might bring up uncomfortable emotions for your daughter. If upon completion of the questionnaire she wishes to speak to someone about any issues that have arisen, she will be given a list of counselling services to contact.

Benefits

Participation in this study will not directly benefit your daughter. However, her input will help contribute to increasing the knowledge in this area. When the project is completed, I will provide the school with a summary of my research findings, which you and your daughter will have free access to if you would like.

Confidentiality

Responses from the questionnaire will be anonymous and will not be linked to your daughter's personal details on the consent form. The consent forms and other identifying information will be kept in a secure location. The information obtained will not be disclosed

to anybody else but myself. Any reports or publications about this study will not identify your daughter, her school, or any other participant. The computers used to type up the data will be password protected.

Voluntary participation and alternatives

If you choose to allow your child to participate in this study, she will also be asked to sign a similar consent form. Her participation is completely voluntary and she is free to choose not to answer any question in the questionnaire or to withdraw from the study completely, without any consequences.

Questions and further information

If you have any questions, complaints or concerns about the study, please do not hesitate to contact myself, Emma Torr on 076 5599 310 or emmatorr96@gmail.com, or my research supervisor, Dr Lauren Wild on (021) 650 4607 or lauren.wild@uct.ac.za. If you have any questions about your daughter's rights as a study participant, please contact the Research Ethics Committee of the Department of Psychology at the University of Cape Town through Mrs Rosalind Adams on (021) 650 3417 or Rosalind.Adams@uct.ac.za.

I ----------, parent/ guardian of ---------- have read the consent form and am satisfied with my understanding of the study, its possible risks and benefits. I hereby voluntarily consent to my child's participation in the research study as described.

---------- ----------

Date Signature

Appendix E

Student Informed Assent Form

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF PSYCHOLOGY

Body confidence and social media

Invitation and purpose

You are invited to participate in this study investigating Instagram use and body satisfaction among adolescents. I am an Honours student from the Department of Psychology at the University of Cape Town.

Study procedures

- If you agree to participate in this study, you will be asked to complete a pen and paper questionnaire about your Instagram use and body satisfaction.
- The questionnaire will require you to fill in basic personal information about your age, race and nationality, followed by 33 questions, which involve circling or ticking the appropriate response.
- It should take approximately 20 minutes to complete.

Possible risks

- There is a possibility that some of the questions might bring up uncomfortable emotions for you.
- If upon completion of the questionnaire you want to speak to someone about any issues that have arisen for you, you will be given a list of counselling services to contact.

Benefits

- Participation in this study will not directly benefit you. However, your input will help contribute to increasing the knowledge in this area. When the project is completed, I will provide the school with a summary of my research findings, which you will have free access to if you would like.

Costs and economic considerations

- There is no cost involved

Confidentiality

- Information about you collected for this study will be kept private.
- Your responses from the questionnaire will be anonymous and will not be linked to any of your personal details
- Your consent form and other identifying information will be kept in a secure location.
- The information obtained will not be disclosed to anybody else but myself.
- Any reports or publications about this study will not identify you, your school or any other participant.
- The computers used to type up the data will be password protected.

Voluntary participation and alternatives

- Participation in this study is completely voluntary. You are free to refuse to answer any question in the questionnaire.
- You are free to change your mind and discontinue participation at any time without any consequences.

Questions and further information

- If you have any questions, complaints or concerns about the study, please do not hesitate to contact myself, Emma Torr on 076 5599 310 or emmatorr96@gmail.com or my research supervisor, Dr Lauren Wild on (021) 650 4607 or lauren.wild@uct.ac.za. If you have any questions about your rights as a study participant, please contact the Research Ethics Committee of the Department of Psychology at the University of Cape Town through Mrs Rosalind Adams on (021) 650 3417 or Rosalind.Adams@uct.ac.za.

I have read the consent form and am satisfied with my understanding of the study, its possible risks and benefits. I hereby voluntarily consent to participation in the research study as described. I know that I am free to withdraw this consent and not participate in the study at any time, with no cost or loss of benefit to myself.

Date

Name of participant (printed)

Signature

Appendix F

Letter of ethical clearance given by the University of Cape Town Ethics Review Committee of the Faculty of Humanities

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

31 May 2018

Emma Torr
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Emma

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your study, *Instagram and eating attitudes and behaviours in South African female adolescents.* The reference number is PSY2018-028

I wish you all the best for your study.

Yours sincerely

University of Cape Town
ΨPSYCHOLOGY DEPARTMENT
Upper Campus
Rondebosch

Floretta Boonzaier
Associate Professor
Ethics Review Committee

Appendix G

Letter of approval from the Western Cape Education Department

Western Cape Government
Education

Directorate: Research

Audrey.wyngaard@westerncape.gov.za
tel: +27 021 467 9272
Fax: 0865902282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20180607–3039
ENQUIRIES: Dr A T Wyngaard

Miss Emma Torr
44 Avignon Estate
Valley Road
Hout Bay
7806

Dear Miss Emma Torr

RESEARCH PROPOSAL: **INSTAGRAM AND EATING ATTITUDES AND BEHAVIOURS IN SOUTH AFRICAN FEMALE ADOLESCENTS**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **23 July 2018 till 28 September 2018**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 21 August 2018

Appendix H

Debriefing Form

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF PSYCHOLOGY

Body confidence and social media

Dear participant,

Thank you for participating in this study. The aim of the study is to examine the role of Instagram use on body satisfaction among adolescents. More specifically the study is looking at whether the amount of time spent on Instagram, the type of Instagram use and the personal importance attributed to features on Instagram are associated with the extent to which adolescent girls are satisfied or dissatisfied with their bodies.

You were asked to fill out basic demographic information, which will be used for descriptive purposes. You then had to answer questions about your Instagram use and finally complete the Eating Attitudes Test (EAT-26). The data you provided will be used for statistical analyses. You are reminded that all of your information will be kept strictly confidential and anonymous. Only I will have access to your data. A copy of my research findings will be made available to the school.

Completing this questionnaire may have triggered uncomfortable emotions for you. Should you feel that you require support or counselling, below is a list of organisations you can contact.

LifeLine
021 461 1111/3

South African Depression and Anxiety Group (SADAG)
011 234 4837

If you have any questions, please feel free to contact me, Emma Torr at emmatorr96@gmail.com or on 0765599310 or alternatively my supervisor, Dr Lauren Wild at lauren.wild@uct.ac.za or on (021) 650 4607. You may also contact the UCT Department of Psychology: Ms Rosalind Adams, rosalind.adams@uct.ac.za if you wish to complain about the study or how I have treated you.