

PICTURE, EDIT, POST, REPEAT: PHOTO EDITING, SOCIAL MEDIA, BODY
IMAGE AND PERSONALITY VARIABLES

by

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ABSTRACT

Social media use has skyrocketed in recent years among teens and young adults. Posting photos on social media that have been edited or manipulated in some way poses interesting psychological questions that have only begun to be addressed in the empirical literature. This study assessed the relationship between social media photo editing generally and with specific photos and personality variables. Eighty-one college students evaluated three photos posted on their Instagram accounts and completed self-report measures of body image, self-perception, and narcissism. An observer also evaluated their posted photos. Results show that the more dissatisfied individuals are with their bodies, the more manipulating they do to their photos. Editing of specific body parts (i.e., faces and stomachs) was associated with negative feelings about these body parts. Narcissism was not significantly predictive of editing behavior. Future studies should continue to assess social media photo manipulations with a larger and more diverse sample.

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CHAPTER I

LITERATURE REVIEW

Recent estimates suggest as many as 1,000 selfies (photos that one has taken of oneself) are posted to Instagram every 10 seconds (Cohen, 2016). This number is just a glimpse of how popular social media sites can be for sharing personal images. People may use social networking sites for many different reasons, such as an outlet and a way to express emotion, to reconnect with old friends, to post or view photos, or to obtain validation/attention for certain aspects of their lives. When photos are posted on social media sites, they may have been edited in a variety of ways, and these edited images are being shared across many social media platforms. The motivating factors for editing one's images prior to sharing them on social media have, however, not been well studied. Such research could provide valuable insight into what motivates someone to edit their images and how those edited images may be used and may impact those who view them. This review will present a critical analysis of the current research on photo editing and social media and related studies. I will then propose a project to further evaluate motivational factors, including body perception and personality characteristics, and how these factors are related to the practice of photo editing on social media.

Photo Editing Activities and Body Perception

Although social media and photo editing applications are very commonly used, there are only a few studies that have evaluated how photo activities on social media (investment, manipulation, editing, etc.) are related to factors such as body image and

body satisfaction. The few studies that are available have focused on general editing in broad categories (e.g. adding a filter to a photo). This lack of specificity demonstrates that more research is needed in order to assess if dissatisfaction with a certain body part is related to editing frequency of that body part. Investigation needs to be done in order to make the results more generalizable to different populations.

McLean, Paxton, Wertheim, and Masters (2015) investigated the relationships between social media activities and body dissatisfaction, excessive evaluation of shape and weight, and dietary restraint. It also focused on understanding how photo investment and photo manipulation are related to body and eating concerns. It was the first study that evaluated all of these factors. There were 101 seventh grade females who participated, which is important to note because the age range was very restricted. The participants provided their age, country of birth, and their parents' countries of birth. The mean age was 13.13 years, and most participants were born in Australia.

Participants were asked to indicate the amount of time on weekdays and weekend days that they used digital media (TVs, DVDs, computers, tablets, and phones). This information was used to assess media exposure. To assess social media and online use, McClean et al. (2015) created a scale and asked participants to indicate whether or not they used eight different forms of communication: text messages, email, Twitter, social networking, instant messaging, virtual worlds, online video sharing, and online photo sharing.

A measure was developed by creating an item pool to assess photo activities. Specifically, selfie-taking frequency, selfie sharing, photo investment, and photo manipulation were evaluated. McClean et al. (2015) asked participants how often they took “selfies” (with only themselves in the photo) and “usies” (with themselves and others). Additionally, the authors asked questions pertaining to the frequency with which participants shared photos of themselves via social media. For photo investment, the authors evaluated “investment and effort participants expend choosing photos of themselves to share on social media and concern they have about such posts” (McClean et al., 2015, p. 1134). These worries can range from concerns about photo quality to concerns about what people might think of the photo, and items were presented along a visual analogue scale from 0 to 100. Additionally, the photo manipulation measure asked participants to indicate (on a 5-point Likert scale) the extent to which they edited photos of themselves before sharing.

To assess how participants felt about their bodies and to see if they were taking any action to change the way they looked, body image, dietary restraint, and internalization of the thin ideal were measured. The Body Dissatisfaction subscale of the Eating Disorders Inventory-3 (Garner, 2004) was used to determine how satisfied participants were with their bodies. In addition, the Eating Disorder Examination Questionnaire was used to assess undue influence of body weight or shape on self-evaluation. The Dutch Eating Behavior Questionnaire Restraint subscale was used to assess dietary restraint. The Sociocultural Attitudes Towards Appearance Questionnaire-

4- Internalization: Thin/Low Body Fat subscale was used to measure internalization of the thin ideal (McClellan et al., 2015).

The results revealed that self-photo sharers were significantly more dissatisfied with their bodies, reported higher over-evaluation of shape/weight, and higher internalization of the thin ideal compared to those who did not share photos online. There was no significant difference between self-photo sharers and non-sharers for dietary restraint (McClellan et al., 2015). Additionally, those who were more invested in photos, and those who more frequently manipulated photos before sharing reported greater body and eating concerns. It is important to note that higher media exposure was not associated with greater body-related and eating concerns, but higher engagement in manipulation and investment in shared photos was (McClellan et al., 2015).

It is necessary to recognize that text messages, emails, and social networks were all considered forms of media in this study. People might behave differently when communicating with just one person, compared to putting photos/ information out for hundreds to see. People might also spend a lot more time emailing and texting than they do scrolling through Facebook or Instagram, but these were all included in the category of social media activities. Additionally, most photo manipulation items were general. For example, “use a filter to change the overall look of the photo,” instead of specific questions related to manipulating weight and shape (McClellan et al., 2015). This study only examined a relatively small sample of females, and most were Australian. Future

research should expand on this study to see how social media relates to self-photo activities and body image concerns in different ethnic groups.

Using existing research from McClean et al. (2015), Cohen, Newton-John, and Slater (2018) also evaluated the relationship between social networking selfie activities and body and eating concerns. Specifically, Cohen et al. (2018) investigated how photo investment and photo manipulation are related to self-objectification, body satisfaction, drive for thinness, and bulimia. Participants were 259 women from several Australian locations who had a mean age of 22.97 years (range: 18-29). In addition to age, ethnicity, and level of education, participants also reported their height and weight so body mass index (BMI) could be determined. The average BMI was 22.45, which is in the normal range (WHO, 2015 as cited by Cohen et al., 2018).

To measure social networking use, participants reported the average amount of time per day they spent online. For selfie-activities, the Photo Activities measure (McClean et al., 2015) was used. Selfie-taking frequency and selfie-sharing behavior were both assessed. The Photo Investment scale (McClean et al., 2015) was used to examine the effort and concern related to posting selfies on the internet. A modified version of McClean et al.'s (2015) Photo Manipulation scale was used to determine the extent to which participants edited photos of themselves before sharing them online.

Thin-ideal internalization, body satisfaction, self-objectification, and disordered eating were also measured. For thin-ideal internalization, the Sociocultural Attitudes Toward Appearance Questionnaire- Version 3 (Thompson, van den Berg, Roehrig,

Guarda, & Heinberg, 2004) was used. Participants were asked to rate whether they agreed or disagreed with statements related to wanting their bodies to look differently. For body satisfaction, the Multidimensional Body-Self Relations Questionnaire- Appearance Scales (Cash, 2000) was used. Self-objectification was measured by the Objectified Body Consciousness Scale (McKinley & Hyde, 1996). Questions from this scale were related to thinking about one's own appearance. Lastly, disordered eating was measured using the Drive for Thinness and Bulimia subscales of the Eating Disorder Inventory-3 (Garner, 2004).

Interesting results were found regarding photo editing. Over half (62.2%) of participants said that they added filters to photos “sometimes” to “very often.” But most participants (80.7%) reported that they “rarely” or “never” made themselves look better in photos by editing to remove blemishes or to look skinnier, etc. (Cohen et al., 2018). Photo manipulation and photo investment were both significantly correlated with thin-ideal internalization and self-objectification. Additionally, photo investment was significantly associated with body dissatisfaction, drive for thinness, and bulimia. Selfie posting was significantly related to body satisfaction, meaning that those who posted more selfies seemed to be more satisfied with their bodies than those who posted fewer selfies. This was not found in McClean et al.'s (2015) study. Overall, selfie activities (photo investment and manipulation) on social networking sites were associated with body-related concerns and disordered eating in young women, but social networking

usage, in general, was unrelated to body-related concerns and disordered eating in these young women (Cohen et al., 2018).

The fact that social networking use and selfie posting behavior were both measured by single items is a limitation of this study. There is a lack of well-validated measures for selfie behavior (Cohen et al., 2018). Additionally, general body satisfaction is a broad category, and perhaps future research should focus on specific parts of the body (e.g., the face). Lastly, this study involved the exclusive use of questionnaires which are vulnerable to self-report bias. It is a possibility that the women in this study might have been embarrassed to record how much manipulating they actually did to a photo before posting it online. Consequently, the results should be interpreted with caution.

Like McClean et al. (2015) and Cohen et al. (2018), Fox and Vendemia (2016) also assessed photos posted on social networking sites. Specifically, this study examined photographic self-presentation and social comparison. There were 1,686 participants, including 908 women and 778 men. The ages ranged from 18 to 40 years old, and the mean age was 29.31. In addition to demographics, participants were asked multiple questions pertaining to social media and body image.

The men and women reported how much time they spent on social networking sites, and how often they posted pictures of themselves on social media (photo posting behavior). To assess body image, participants answered a question about the degree to which seven adjectives described how they felt about their bodies. Fox and Vendemia (2016) also asked participants to report their height and weight so body mass index

(BMI) could be determined. Body social comparison was evaluated by determining how often participants compared themselves to other bodies. They were also asked to respond on a 5-point scale how they felt about their own bodies after seeing flattering versus unflattering photos of others, which assessed the effects of social networking sites (SNS) body social comparison. The most relevant (to this study) measure evaluated was photo editing behavior. Participants' editing behavior was evaluated by asking how frequently they used three specific methods of improving appearance. These three methods included: cropping or cutting parts of self out of pictures, using photographic filters, and/or using Photoshop or other picture editing applications (Fox & Vendemia, 2016).

The results showed some sex differences. Women put more effort into maintaining a socially desirable physical appearance online by editing photos, and they also edited photos more frequently than men (Fox & Vendemia, 2016). Additionally, women reported feeling worse after upward body social comparisons, which means that viewing pictures of someone identified as attractive made women feel worse about themselves than it did for men. However, for downward social comparisons, both men and women felt better about themselves after seeing unflattering photos of others (Fox & Vendemia, 2016). There was no difference found in posting frequency for males and females.

There were some limitations. First, self-report data was used (Fox and Vendemia, 2016). It is possible that participants responded in ways that they felt were socially desirable. It is also important to note that the photo editing behavior measure only

assessed three methods (cutting/cropping parts of self out of photo, using photographic filters, and using Photoshop or another editing software). Using photographic filters is extremely broad, and there are many different degrees to which a picture can be edited. Neither of these provide specific information pertaining to how the photos were edited. Additionally, actual body comparison behavior on social networking sites was not measured (Fox and Vendemia, 2016). A general measure of body comparison tendency was used with the assessment of how people felt after upward and downward social comparisons (viewing flattering and unflattering photos of others). Lastly, all the participants resided in the United States (Fox & Vendemia, 2016). Future research should expand to investigate different countries and different ages, such as participants who are younger than 18 years of age.

Like Fox and Vendemia (2016), Chae (2017) conducted a study pertaining to photo editing and social comparison behavior. This study consisted of two assessments (i.e., waves) of the same sample of participants conducted one month apart. The sample consisted of 1,064 Korean females with a mean age of 29.3 years (range: 20-39 years).

Participants reported monthly income, education, age, and marital status. Additionally, selfie-taking frequency, social media use frequency, public self-consciousness, and satisfaction with facial appearance were measured. For selfie-taking frequency, participants reported how many times they took a selfie in the past 30 days. For social media use, they reported how often, on the average weekday, they used each platform (blogs, online communities, Facebook, Instagram, LinkedIn, Band, and Kakao

story) on average weekdays (Chae, 2017). Public self-consciousness was evaluated by using a scale constructed by Fenigstein, Scheier, and Buss (1975). “The scale assesses the level of an individual’s consciousness toward other people’s perception on oneself” (Chae, 2017, p. 373). Satisfaction with facial appearance was assessed by using a 10-item scale with questions pertaining to overall satisfaction with the way one’s face appeared (e.g., “How symmetric your face looks?”).

Social comparison behavior was evaluated by asking participants how often they compared their appearance to friends, social media influencers, and celebrities in the past 30 days. Participants were also asked how often in the past 30 days they edited their selfies by using photo-editing applications.

Selfie-taking frequency, social media use, and public self-consciousness were associated with editing frequency at wave one, which increased editing frequency at wave two, but these variables did not directly influence selfie-editing at wave two. The results also showed that selfie-taking, social media use, and public self-consciousness were all associated with both social comparisons with friends and influencers/celebrities at wave one (Chae, 2017). Additionally, satisfaction with facial appearance was not related to either type of social comparison, nor did it demonstrate a relationship with selfie-editing.

It is necessary to consider that people may not be following social media influencers or celebrities on their personal accounts. For those who do, they may be comparing themselves to celebrities who are obligated to look a certain way and only

post photos that reflect that persona. It is also important to state that the social media use measure included eight platforms, but Band and Kakao Story are platforms that are popular specifically in Korea, so these might not be understood by participants in other countries. Additionally, Chae (2017) only asked the participants to state how often they used these platforms on weekdays; weekends were not included. Only Korean females were used for this study, so the results may not be generalizable to non-Koreans and men. Including men and women of different nationalities would have been beneficial.

Lastly, this study focused on the predictors of selfie-editing. There was no way to determine the validity of these self-reports measuring how often participants edited their selfies in the past 30 days. Results of selfie-editing were only mentioned when discussing previous studies (Chae, 2017). Perhaps future research could focus on the effects of selfie-editing and how it influences behavior.

The studies by McClean et al. (2015) and Cohen et al. (2018) are influential for this thesis, although these studies included only female participants residing in Australia. Both McClean et al. (2015) and Cohen et al. (2018) found that those who were more invested in photos, and those who manipulated photos before sharing reported greater body and eating concerns. It is crucial to report that Cohen et al. (2018) found that selfie posting was significantly related to body satisfaction, but this was not found in McClean et al.'s (2015) study.

Additionally, Fox and Vendemia (2016) and Chae (2017) examined photo editing frequency and social comparison behavior. Chae (2017) used only Korean females, and

Fox and Vendemia (2016) used only those who resided in the United States, although both males and females were included. Fox and Vendemia (2016) found that women edited photos more frequently than men before posting them online. It is important to consider that the types of editing/manipulations that were performed on the photos were not specified. Chae (2017) found that satisfaction with facial appearance had neither direct nor indirect effects on selfie-editing. Additionally, Chae (2017) reported that selfie-taking frequency (regardless of if the selfie was posted online) was related to increased editing frequency. Both Chae (2017) and Fox and Vendemia (2016) found evidence to contribute to social comparisons. For Chae (2017), social comparisons with friends showed increased selfie editing. Fox and Vendemia (2016) found that women felt worse after upward body social comparisons.

Overall, it is important to note that there were no specific questions related to photo editing of specific body parts in these studies. Chae (2017) assessed photo editing frequency, whereas McClean et al. (2015), Cohen et al. (2018), and Fox and Vendemia (2016) evaluated overall photo editing behavior. The scale used to measure photo manipulation in the McClean et al. (2015) study included 10 items that were very broad, and Cohen et al. (2018) used a modified version of this scale, which included only two items (edit photos in general and edit photos to make yourself look better). Photo editing behavior in the Fox and Vendemia (2016) study included only three methods of improving appearance (cropping, using filters, and using Photoshop), and photo editing frequency in the Chae (2017) study assessed retouching selfies by using photo editing

applications. This shows that more research focusing on specific editing features needs to be done in order to provide more representative results.

Social Media Posts and Psychological Factors

Evaluating the types of photos people post on their social media accounts and the relation to personality factors has been the focus of a few recent studies. These studies evaluated variables such as body dissatisfaction, narcissism, and sexualization, and the connection of these variables to characteristics of posted photos on social media. Social networking photo activities can influence the feedback that photos receive. Beyond body dissatisfaction, additional factors such as enjoyment of sexualization and narcissism can show how posts that people share online relate to traits they may possess. Ramsey and Horan (2018) and Barry, Reiter, Anderson, Schoessler, and Sidoti (2017) created coding schemes to evaluate psychological factors that relate to the types of photos people post on Instagram/ Facebook.

Ramsey and Horan (2018) conducted a study focusing on sexualization of self on social media and the feedback that photos receive. Predictions of which women post certain kinds of photos, along with sexual agency were explored. There were 61 female participants in this study, and the mean age was 19.23 years.

Participants were asked to log into their own social media accounts (either Instagram or Facebook), and to record how many followers/friends they had on each site. They then had to screenshot the last ten photos they posted on social media. The photos had to include the participant and had to have been uploaded by the participant herself.

All identifying information was removed from the photos, and the researcher recorded the number of likes on each photo.

The survey that was given included many measures. In addition to demographics (including sexual orientation), desire for attention on social media and contingencies of self-worth for social media were evaluated. Contingencies of self-worth for social media were evaluated using a measure created by Sanchez and Kwang (2007). Additionally, body surveillance was assessed using a subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996), and self-objectification was assessed using the Self-Objectification Questionnaire (Noll & Fredrickson, 1998). Enjoyment of sexualization and sex as a source of power (extent to which women believe that they gain power over men through sexuality) were both assessed using scales created by Erchull and Liss (2013). Sexual agency, which determined how confident participants felt in five aspects of sexual interactions, was evaluated using the Sexual Self-Efficacy Scale for Women (Bailes et al., 1989).

A revised version of the coding scheme by Ruckel and Hill (2017) determined the level of sexualization in each photo. The categories included: clothing/nudity, breast/chest, buttocks, genitals, leg/thighs, mouth, eyes, head vs. body shot, pose, self-taken, sex act, sexual role play, touch, and hair (Ramsey & Horan, 2018). Results found that the degree of sexualization in photos on Instagram was positively correlated with self-objectification. Additionally, sexualization in photos on both Instagram and Facebook were positively correlated with a desire for attention on social media.

Both desiring attention on social media and receiving likes/comments on photos were positively correlated with surveillance, enjoyment of sexualization, and viewing sex as a source of power. Desiring attention alone was correlated with self-objectification. The findings showed that more sexualized photos are more likely to receive likes than less sexualized photos but posting sexualized photos on Instagram was negatively related to being able to communicate about sex. In other words, posting more revealing photos was associated with less confidence in communicating during a sexual encounter. Out of the two platforms, Instagram appeared to be more sexualized than Facebook, but this study also found that young women do not post many sexualized photos of themselves on social media (Ramsey & Horan, 2018).

The small sample size (61) of this study must be considered, along with the fact that the researchers were not allowed to directly observe the participants' social media profiles. They had to rely on the participants' honesty in saving the ten most recent photographs. Additionally, asking the participants to save their photos before answering the surveys could have affected their responses (Ramsey & Horan, 2018).

In conclusion, it seems that women who want attention on social media are more likely to post sexualized photos. Additionally, sexualized photos tend to get more likes (and the accounts have more friends/followers), specifically on Instagram, compared to non-sexualized photos. Future research should assess why people post certain types of photos on certain social media platforms. Evaluating how the cultural pressures women

tend to face regarding their appearance relate to photo posting behaviors should be a focus for future studies (Ramsey & Horan, 2018).

Like Ramsey and Horan (2018), Barry et al. (2017) also evaluated the photos that people post on their social media accounts. They conducted a study on the association between posting selfies (pictures of self) and/or posies (pictures of self that were not selfies) and self-perception. Specifically, the authors evaluated Narcissism using Instagram. Physical appearance concerns and fear of missing out (FOMO) were also considered. There were 100 undergraduate participants for this study (20 males, 80 females), and a coding scheme was developed related to specific themes.

Participants provided their own Instagram usernames and consented to having their accounts observed for 30 days. Coders who were blind to participants' ratings on self-report measures recorded the length of time since the participant's first Instagram post, the number of posts at the start of the study, the number of followers the participant had, along with the number of accounts they followed (Barry et al., 2017). Coders then evaluated all the same measures at the end of the study. Additionally, each post was coded as a selfie, a non-selfie of the participant (posie), or an image that did not include the participant. This is unlike the Ramsey and Horan (2018) study which only used photos that included the participant (Barry et al., 2017). The scheme separated photos by themes. The categories were physical appearance, affiliation with others, event/activity/location/accomplishment, collage, or other/undifferentiated (theme was not

clear) (Barry et al., 2017). Captions, hashtags, and location tags were all included in the determination of the theme of each photo.

To assess narcissism, the Pathological Narcissism Inventory (PNI) (Pincus et al., 2009) and Narcissistic Personality Inventory (NPI) (Raskin & Terry, 1988) were used. The Rosenberg Self- Esteem Scale (RSES) was used to assess how the participants felt about themselves (Rosenberg, 1965). For appearance concerns, The Physical Appearance Comparison Scale (PACS) evaluated individual's preoccupation in social situations relative to others (Thompson, Heinberg, & Tantleff-Dunn, 1991) and the Sociocultural Attitudes Toward Appearance Scale-3 (SATAQ-3) focused on the extent to which participants were concerned about how society views an ideal physical image (Thompson et al., 2004). The Fear of Missing Out Survey (FoMOS) was used to evaluate FOMO.

Results found that participants who posted a higher volume of Instagram posts tended to post more selfies and posies specifically. Additionally, individuals who posted selfies also tended to post other images of themselves. It is important to note that neither of these were related to narcissism, self-esteem, FOMO, or preoccupation with physical appearance standards (Barry et al., 2017). Overall, posting selfies is not indicative of narcissism. Additionally, physical appearance-focused posies were not tied to such physical appearance concerns (Barry et al., 2017). The key overall finding was that observed posts of one's own image were not associated with narcissism or other forms of self-perception. Perhaps the posts may be more closely related to reinforcing aspects of social media feedback from a familiar audience (Barry et al., 2017). It is possible that

people post selfies to conform to a cultural norm. Some limitations to consider are the small sample size, and bivariate correlations between self-perception and self-images. Also, the coding scheme may need further investigation and revision (Barry et al., 2017).

Considering both of these studies (i.e., Barry et al., 2017; Ramsey & Horan, 2018) on personality variables and social media posts, a few patterns emerge. Both of these studies involved use of photos on the participants' personal Instagram or Facebook accounts. For Ramsey and Horan (2018) the participants screenshotted their last 10 posts, and for Barry et al. (2017), participants agreed to having their accounts observed for 30 days. It is important to note that neither of these studies had the participants doing any type of assessment of their own photos, only the coders did the evaluating. Ramsey and Horan (2018) found that more sexualized photos are more likely to receive likes than less sexualized photos. They also found that women who want attention on social media are more likely to post sexualized photos. Surprisingly, Barry et al. (2017) found that posting selfies were not indicative of narcissism. Neither of these studies considered the type of editing and manipulation done to the posted photos, which could have been an interesting factor. The reinforcing aspects of social media feedback were not considered in either study and could also be considered in future research.

Summary and Purpose of the Current Study

Overall, these studies show that photo posting is related to many different factors. Fox and Vendemia (2016) found that women edited photos more frequently than men before posting them online, but there are very few studies including males. McClean et

al. (2015) and Cohen et al. (2018) found that those who were more invested in photos and those who manipulated photos before sharing reported greater body and eating concerns. There was some discrepancy between the findings for selfie posting behavior. Cohen et al. (2018) found that selfie posting was significantly related to body satisfaction but McClean et al. (2015) did not find this. Additionally, Barry et al. (2017) found that posting selfies was not indicative of narcissism or preoccupation with physical appearance standards. It is important to consider that the amount of editing that was done to the selfie before posting it may have had an impact, although Chae (2017) found that satisfaction with facial appearance had neither direct nor indirect effects on selfie-editing. It is clear that research needs to be conducted further, especially to assess the influence that feedback from peers can have on photo behaviors. Ramsey and Horan (2018) found that more sexualized photos received more likes, but there was no measure to see if the likes were reinforcing. For Chae (2017), social comparisons with friends showed increased selfie editing. Fox and Vendemia (2016) found that women felt worse after upward body social comparisons. These findings show that those who edit their photos might be influenced by the people they surround themselves with.

None of these studies evaluated editing of specific body parts; they instead considered overall facial/body satisfaction. The photo manipulation measures used in these studies were not specific, and the participants never evaluated their own photos. Additionally, small sample sizes and self-report data must be considered. It is possible

that the participants did not accurately report how much editing they actually did on their photos.

The purpose of this study was to assess how the amount of editing and manipulating that participants have done to photos posted on their Instagram may be related to body satisfaction, body-esteem, self-esteem, and narcissism. Specifically, it was hypothesized that the more dissatisfied a person is with his/her body, the more often he/she would edit photos before posting them online. Further, it was predicted that lower body esteem and satisfaction would be associated with more editing of their photos. Additionally, narcissistic traits were predicted to be associated with more frequent editing of their photos. Lastly, it was hypothesized that the more satisfied a person is with a specific body part, the less often they would edit that body part.

CHAPTER II

METHOD

Participants

Eighty-one college students participated in the study. They were recruited through the Middle Tennessee State University Psychology Department Research Pool ($n = 74$) or by word of mouth snowballing from those who had participated or knew about the study ($n = 7$). The participants were aged between 18 and 27 years ($M = 20.03$, $SD = 2.21$), and they all had Instagram accounts. Those who signed up through the Psychology Department Research Pool received research credit in their psychology course for their participation. Both males and females participated, as well as individuals from various racial and ethnic backgrounds. Table 1 provides a summary of the demographic data for the participants.

Measures

Demographics. Participants reported their demographics at the beginning of the survey (see Appendix A). Along with age and level of education, participants were also asked to indicate their gender and ethnicity. Additionally, participants provided information regarding what types of social media accounts they have.

Anthropometrics. Body weight and height were measured. Weight was measured to the nearest $\frac{1}{2}$ pound using a 1byone Bluetooth™ Smart Body Fat Scale. These scales assess body weight, body fat, water, muscle mass, body mass index (BMI), bone mass, and visceral fat. Height was measured using a standard measuring tape to the

Table 1
Demographic Variables for the Full Sample

Variable	Percentage
Year	
Freshman	46.9
Sophomore	27.2
Junior	14.8
Senior	3.7
Graduate Student	7.4
Gender	
Male	18.5
Female	81.5
Ethnicity	
Asian/Pacific Islander	4.9
Black or African American	28.4
Hispanic or Latino	6.2
Mixed	1.2
Native American/ American Indian	1.2
White	55.5
Other	1.2

nearest ½ inch. Body Mass Index (BMI) was calculated by the formula: $703 \times \text{weight (lbs)} / [\text{height (in)}]^2$.

Eating Disorders Inventory – 3 (EDI-3; Garner, 2004). The EDI-3 is a 91-item survey assessing body image and psychological factors associated with eating disorders risk. Items are organized into 12 primary scales: 3 eating-disorder specific scales, and 9 general psychological scales. Items are rated on a 6–point Likert scale from 0 (*never*) to 5 (*always*) to indicate the extent to which one experiences specific thoughts, feelings, and actions. Three subscales assess body image and eating disorders related factors: the 7-item drive for thinness (DT), 8-item bulimia (B), and 10-item body dissatisfaction (BD) subscales. These scales are combined to calculate an Eating Disorders Risk Composite score. There also are nine subscales assessing psychological factors, including the 6-item Low Self- Esteem (LSE) scale, the 7-item Personal Alienation (PA) scale, the 7-item Interpersonal Insecurity (II) scale, the 7-item Interpersonal Alienation (IA) scale, the 9-item Interoceptive Deficits (ID) scale, the 8-item Emotional Disregulation (ED) scale, the 6-item Perfectionism (P) scale, the 7-item Ascetism (A) scale, and the 8-item Maturity Fears (MF) scale. Scores are computed by summing all item scores for that particular scale (raw score) and converting to T-scores and percentiles. To get composite scores, T-scores are summed for the relevant subscales. For example, the Eating Disorder Risk Composite (EDRC) is the sum of T-scores for the DT, B, and BD subscales. The DT, B, and BD subscale raw scores were used in the current study to assess eating disorders risk variables.

The EDI-3 shows good internal consistency of item scales. The composite T-score of the EDRC has alpha coefficients between .90 and .97 across the three normative groups. Additionally, the psychological scales show alpha coefficients with medians of .84, .74, and .85 for the normative samples. For test-retest of 34 female participants, the EDRC coefficient was .98 and the median coefficient for the Eating Disorder Risk subscales was .95. For the psychological scales, the median coefficient was .93 (Garner, 2004).

The validity of the EDI-3 has been supported. The scales were correlated with corresponding scales of the Eating Attitudes Test (EAT-26), Bulimia Test- Revised (BULIT-R), and the Rosenberg Self- Esteem Scale. Convergent validity is demonstrated by a correlation of .83 between the low self-esteem scale of the EDI-3 and the Rosenberg Self- Esteem scale. Adequate discriminant validity for most of the EDI-3 subscales and composites is suggested by low correlation with two measures of general psychopathology: The Symptom Checklist-90 (Derogatis, 1977) and Millon Clinical Multiaxial Inventory-II (Millon, 1987) (Garner, 2004).

Body Esteem Scale. The 35-item Body Esteem Scale (BES; Franzoi & Shields, 1984) was used to measure how participants feel about their specific body parts and functions (see Appendix B). Items such as “body scent”, “appearance of eyes”, “figure or physique,” and “arms” are rated on a 5-point scale ranging from *strong negative feelings* to *strong positive feelings*. Two different sets of three factors emerged for males and females: (1) Physical Attractiveness (PA) for males or Sexual Attractiveness (SA) for

females, (2) Body Strength (UBS) for males or Weight Concern (WC) for females, and (3) Physical Condition (PC) for both males and females (Franzoi & Shields, 1984). It is important to note that factor invariance was not demonstrated for the two sexes. To score the BES, the individual item scores are summed for items on the subscale. For example, for female sexual attractiveness, the participants' ratings of items 1, 3, 6, 11, 13, 20, 21, 22, 26, 28, 31, 32, and 34 are summed. For this study, total scores were used for both males and females.

Test-retest reliability over a 3-month time period for all three male subscales: physical attractiveness, $r = .58$, upper body strength $r = .75$, and physical condition $r = .83$ (Franzoi, 1994). Additionally, the three female subscales have reported high test-retest reliability for sexual attractiveness, $r = .81$, weight concern, $r = .87$, and physical condition, $r = .75$ (Franzoi, 1994). Relative to the Self-Presentation Scale (SPS; Roth, Snyder, & Pace, 1986), none of the correlations between the BES subscale scores for males and the SPS negative denial subscale were significant. The SPS measures a person's tendency to present themselves in a positive light. The negative denial subscale (of the SPS) specifically measures a person's tendency to unrealistically deny self-characteristics (Franzoi, 1994).

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The Rosenberg Self-Esteem scale was used to assess confidence in one's own worth or abilities (Rosenberg, 1965; See Appendix C). There are 10 items, such as, "I wish I could have more respect for myself" and "I feel that I have a number of good qualities." Responses are made on a

4-point scale ranging from *strongly disagree* to *strongly agree*. For items 1, 2, 4, 6, and 7, *strongly disagree* = 0 and *strongly agree* = 3. For items 3, 5, 8, 9, and 10, they are reverse scored: *strongly disagree* = 3 and *strongly agree* = 0. All the items are summed for a total score. Scores range from 0 to 30, with higher scores representing higher self-esteem. The overall score on the RSES was used in the current study as a measure of overall self-esteem.

The Rosenberg Self- Esteem Scale has demonstrated to be a psychometrically sound tool. Reported internal consistency is .77 and Coefficient of Reproducibility is at least a .90 (Rosenberg, 1965). Test-retest reliability was calculated at .85 for a 2-week interval, and .63 for a 7-month interval (Silber & Tippett, 1965, as cited by Statistics Solutions, 2018). Cronbach's alpha has been shown to be high at .81. Excellent concurrent validity in relation to other measures of self-esteem (.77 to .88) has been shown with a sample of 1,686 high school students (Myers & Winters, 2002 as cited by Statistics Solutions, 2018). Additionally, a negative correlation with an anxiety measure (-.64) and with a depression measure (-.54) with high school juniors and seniors indicates concurrent validity (Rosenberg, 1965).

Narcissistic Personality Inventory. The Narcissistic Personality Inventory (NPI) is a 40-item measure that assesses dimensions of narcissism (Raskin & Terry, 1988). Participants were asked to choose one of two statements (e.g., "I try not to show off" vs. "I am apt to show off if given the chance") that best reflects his/her thoughts and behaviors (see Appendix D). To score, one point is assigned for each response that

represents the more narcissistic viewpoint. For example, if the participant chose response A: “I can usually talk my way out of anything” on question number six, they would receive one point. If they chose response B: “I try to accept the consequences of my behavior” on number six, they would receive 0 points. There are seven component traits that can be examined: authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity, and entitlement (Raskin & Terry, 1998). A total score is calculated by adding all item scores. Higher scores reflect higher tendencies toward narcissism. For this study, the overall score was used as a measure of narcissistic tendencies.

The psychometric properties for the NPI have been investigated, with strong construct validity and ecological validity reported (e.g., Raskin & Terry, 1998). Evidence has shown high reliability relating to personality traits, specifically, positive correlations to extraversion and psychoticism have been seen (Raskin & Terry, 1998). Additionally, Ames, Rose, and Anderson (2006) conducted a study to assess shortened versions of the NPI-40, the NPI-15 and the NPI-16. They found that NPI-15 was significantly correlated with both the NPI-16 (.86 in Study 1; .84 in Study 4) and the NPI-40 (.91 in both studies), suggesting that both of the shortened versions are meaningful measures of narcissism.

Social Media Photos and Photo Editing. A photo editing survey, created by the author, was used to assess participants’ use of photo editing software and applications on photos posted on social media accounts (see Appendix E). An item assessing the frequency of editing on social media, “How often do you edit your photos before posting

them online?” was included. Participants responded from 1 (*never*) to 5 (*always*). Additionally, participants were asked to report how frequently they use specific applications/software, such as Perfect365, FaceTune1/2, VSCO, Afterlight, and AirBrush to edit their photos. The participants also were asked to fill in any other apps they use and to indicate the frequency of usage. To assess specific types of photo editing and manipulations, participants answered questions about photos that they have shared on any of their social media accounts. Specifically, participants responded to 19 items, selecting one rating from 1 (*never*) to 5 (*always*) to indicate the frequency with which they manipulated photos of themselves in specific ways (e.g., “how often do you edit your nose”; “how often do you edit your thighs”) prior to sharing on any of their social media accounts. The specific body parts included in these items were selected due to their inclusion on the Body Esteem Scale used in this study.

Instagram Photo Edits. The three most recent photos (that include people – not just scenery or objects) from the participant’s own Instagram account were evaluated using a researcher constructed tool (see Appendix F). The participants were asked to report how many “likes” the photo received, what apps/software they used to edit each picture, and the amount of time they spent editing the photo. They were also asked to indicate whether certain body parts were edited/manipulated in each photo. Examples include, “whitened teeth,” “removed/blurred blemishes,” and “enhanced size of buttocks.” The participants placed a check mark next to every box that applied to each photo being evaluated (i.e., photos 1, 2, and 3). A total of 28 items were included to

evaluate each specific photo. A blind observer (who had not seen the original photos before seeing the edited ones) evaluated the same photos from the participants' social media accounts and completed the same measure (see Appendix G). The researcher placed a check mark next to every box that corresponded with the editing that appeared to have been done, in their opinion, to each photo (i.e., photos 1, 2, and 3). This allowed a comparison of the editing that participants reported on their photos to the editing that the researcher reported had appeared to be done.

Procedure

Participants arrived at a study room in the library on Middle Tennessee State University's campus to participate. After giving consent, participants completed the demographic information, anthropometrics, the Eating Disorder Inventory-3, the Body Esteem Scale, the Rosenberg Self-Esteem Scale, and the Narcissistic Personality Inventory. They were also asked to log on to their own personal Instagram accounts and to complete the questionnaires about the photos. A blind observer also completed the photo editing measure independently while the Instagram photos were open. She was trained by the lead author to evaluate specific edits done to the photos. For example, she was taught to code if they edited their skin by using applications or changed their hair with a Snapchat filter. Half of the sample completed the questionnaires first and half completed the Instagram analysis first. The order of the questionnaires was counterbalanced to control for potential order effects.

CHAPTER III

RESULTS

Table 2 provides the means and standard deviations for the primary dependent variables. These data indicate the sample was engaging in some social media photo editing and reported generally positive body and self-esteem. They also reported low eating disorders risk based on their EDI-3 subscales.

Instagram Photo Manipulations

Table 3 provides the total number of participants editing each body part as reported by the participant and by the blind observer. There was some discrepancy between what appeared to be edited and what the participants endorsed as edited. The mean for photo manipulations reported by participants was 2.31 ($SD = 3.76$), and the mean for photo manipulations reported by the blind observer was 4.04 ($SD = 3.87$), demonstrating that the blind observer identified more potential manipulations than did the participants. The most frequent editing reported by both the participants and the blind observer was removing/blurring blemishes or skin imperfections. The second most frequent manipulation participants reported was adding makeup to their photos, which was the fourth most frequent for the blind observer. For the blind observer, cropping body parts out of photos was the second most frequent manipulation seen, which was the fourth most commonly seen by the participants. Additionally, teeth whitening was the third most frequent edit reported by both participants and the blind observer.

Table 2
Descriptive Statistics for Each Dependent Variable

Variable	<i>M</i>	<i>SD</i>
Overall Editing Behavior (How frequently one edits photos before posting)	3.15	1.38
Number of Photo Manipulations	2.31	3.76
Body Esteem Scale (BES)	119.41	23.75
Rosenberg Self-Esteem Scale (RSES)	16.60	2.09
Narcissism Personality Inventory (NPI)	14.65	6.61
Eating Disorders Inventory-3 (EDI-3)		
Drive for Thinness	9.53	7.81
Bulimia	5.99	6.37
Body Dissatisfaction	14.65	8.95

Note. For overall editing behavior, the higher the number, the more frequent the editing on a scale of 1 to 5. For photo manipulations, higher scores = more manipulations. For the BES, scores range from 35 to 175 with higher scores indicating more positive body perception. For the RSES, scores range from 0 to 30, with higher scores representing higher self-esteem. For the NPI, scores range from 0 to 30, and higher scores reflect higher tendencies toward narcissism. For the EDI-3 subscales, drive for thinness scores range from 0-28, bulimia scores range from 0-32, and body dissatisfaction scores range from 0-40. Higher scores reflect more risk for disordered eating behavior.

Table 3

Total Number of Participants Editing Each Body Part in Any Instagram Photo by Participant and Blind Observer Report

<u>Variable</u>	<u>Participant(s)</u>	<u>Blind Observer</u>
Teeth (whitened)	11	24
Eyes	4	4
Hair	8	3
Chin	2	3
Thinned face/ defined jaw	6	5
Thickened face	0	0
Changed structure of face	3	4
Added makeup to face	14	23
Nose	2	5
Enhanced size of lips	1	3
Decreased size of lips	1	2
Skin (removed blemishes)	24	50
Enhanced size of breasts	0	0
Decreased size of breasts	0	0
Made arms thinner	2	1
Made arms thicker	0	0
Made torso thinner	1	2
Made torso thicker	1	0
Erased fat on stomach	3	1
Added abs to stomach	0	0
Enhanced size of hips	0	0
Decreased size of hips	3	1
Enhanced size of buttocks	1	2
Decreased size of buttocks	0	1
Made thighs thinner	2	0
Made thighs thicker	1	1
Legs (more toned)	1	1
Cropped body parts out	10	36

Relationship Between Photo Editing and Other Variables

Table 4 provides the correlations among the primary dependent variables. It was hypothesized that higher reports of body dissatisfaction would be positively correlated with overall frequency in photo editing. The Body Dissatisfaction subscale of the EDI-3 and the mean score from item number 1 from the Overall Editing Behavior Questionnaire were used to test this hypothesis. A Pearson Product Moment correlation assessing the relationship between body dissatisfaction and overall editing frequency indicates that this hypothesis was not supported ($r = .18, p = .15, N = 67$).

It also was predicted that body esteem and body satisfaction would be significantly positively correlated with photo editing behavior. The overall score on the Body Esteem Scale (BES), the overall score on the Body Dissatisfaction subscale of the EDI-3, the total number of items endorsed on the Photo Manipulations Questionnaire, and the Overall Editing Behavior Questionnaire (mean score from item 1) were used to test this hypothesis. Pearson Product Moment correlations were calculated and indicate that this hypothesis was partially supported (see table 4). There was no significant correlation between the BES and the Photo Manipulations Questionnaire ($r = -.14, p = .24, N = 71$), but there was a significant positive correlation between the Body Dissatisfaction subscale and the Photo Manipulations Questionnaire ($r = .24, p = .03, N = 79$), indicating more dissatisfaction is associated with more editing. Additionally, a significant correlation was found between Overall Editing Behavior (a measure of frequency) and Photo Manipulations ($r = .42, p = .00, N = 68$), but not between Overall

Table 4

Correlations Between BES Item and Frequency of Editing Body Parts

Body Part	Pearson Correlation	Sig. (2-tailed)	N
Face	-.35**	.002	78
Eyes	-.22	.06	77
Cheeks	-.19	.10	78
Lips	-.13	.28	77
Chin	-.21	.07	77
Ears ^a	-	-	-
Shoulders	.01	.93	77
Biceps	.09	.42	77
Arms	-.18	.12	78
Stomach	-.24*	.03	78
Waist	-.17	.14	77
Buttocks	.03	.82	77
Thighs	-.17	.16	76
Legs	-.19	.10	78
Feet	.10	.39	78
Figure	-.12	.29	78

Note. ^a = Correlation could not be calculated due to no participant endorsing having edited their ears (i.e., constant responses). *p<.05. **p<.01.

Editing Behavior and the BES ($r = -.13, p = .33, N = 60$), or BD ($r = .18, p = .15, N = 67$), indicating more frequent reported general editing was predictive of actual specific photo editing but was not associated with body esteem.

Further, it was predicted that narcissistic traits would be associated with editing photos more frequently. The Narcissism Personality Inventory total score, the total number of items endorsed on the Photo Manipulations Questionnaire, and the Overall Editing Behavior Questionnaire (score from item 1) were used to test this hypothesis. Pearson Product Moment correlations indicate that this hypothesis was not supported; narcissism was not significantly related to either frequency of reported general photo editing or the number of actual specific photo edits (see table 4).

Although not hypothesized, a regression analysis was conducted to predict photo manipulations from the Narcissism Personality Inventory (NPI) total score, the Body Dissatisfaction subscale from the EDI-3, the Body Esteem Scale (BES) total score, the Rosenberg Self-Esteem Scale (RSES) total score, and body mass index (BMI). The variables were entered simultaneously, and the resulting regression was not significant ($R^2 = .127, F(5, 66) = 1.78, p = .131$). Table 5 includes each variable, beta weights, and *t*-values for the regression analysis.

Lastly, it was predicted that the more satisfied someone is with a specific body part, the less often they would edit that body part. Items on the Body Esteem Scale and the corresponding editing frequency for that body part on the Overall Editing Behavior Questionnaire was used to test this hypothesis. Pearson Product Moment correlations

Table 5

Regression Analyses Predicting Photo Manipulation

Model	Coefficients			<i>t</i>	<i>Sig.</i>
	Unstandardized		Standardized		
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
1 (Constant)	6.380	5.071		1.258	.213
NPITotalScore	.166	.085	.282	1.943	.057
BodyDiss	.136	.075	.311	1.827	.073
BESTotal	-.021	.027	-.126	-.768	.446
BMI	-.082	.097	-.127	-.847	.401
RSESTotal	-.232	.227	-.127	-1.025	.309

between BES item score and frequency of editing score (see Table 4) indicate a significant negative relationship between frequency of editing and how positively participants feel about their body parts for the stomach and face. No other body part showed a significant relationship. Because 16 items that are related were analyzed, a p -value of $.05/16$ or $.003$ was used to control for Type I error. When using this value, only face ($r = -.35, p = .002, N = 78$) showed a significant negative relationship for frequency of editing and positive feelings.

CHAPTER IV

DISCUSSION

The purpose of this study was to evaluate how the amount of editing participants did to their social media photos before posting them online was related to how satisfied they were with their specific body parts, how positively or negatively they felt about themselves and their bodies overall, and how likely they were to possess narcissistic traits. The participants logged onto their own Instagram accounts and evaluated their own photos. The blind observer also assessed editing of the photos. The participants completed questionnaires and allowed their height and weight to be measured. Previous research focused on broad photo editing (e.g., McClean et al. (2015), Cohen et al. (2018), Fox and Vendemia (2016), Chae (2017)), so more specific measures were created for this project. By having the participants and a blind observer evaluate the Instagram photos, discrepancies between what appeared to be edited and what the participants reported could be evaluated. Although the frequencies between photo edits varied for the participants and the blind observer, blurring blemishes, adding makeup, whitening teeth, and cropping body parts out of photos were recorded the most from both groups. It could be considered that when a person takes a selfie, he/she may purposely crop out his/her body so that the focus is on his/her face. Additionally, Snapchat filters typically add makeup, so those who were using these photos on their Instagram accounts endorsed more makeup application. The study was completely anonymous, which encouraged

participants to answer as freely and as truthfully as they wanted. Social media is continuously evolving, so this topic is extremely relevant to society today.

The results showed that body dissatisfaction was not positively correlated with overall frequency in photo editing. In other words, a person being highly dissatisfied with his/her body is not significantly associated with that person editing his/her photos more often. Additionally, the results did not find that those who possess narcissistic traits (high scorers on the NPI) edit their photos more frequently than those who do not possess the traits. This is related to a study done by Barry et al. (2017) which found that posting selfies is not indicative of narcissism. It was predicted that the high scorers on the NPI would edit their photos more frequently, but this was not found. Perhaps it could be considered that those who possess narcissistic traits do not feel a need to edit their photos because they think they already look great. Future research could benefit by assessing if the types of feedback people receive on their photos (likes, comments, etc.) is related to narcissistic traits.

Although the results did not find that those with more negative feelings about their specific body parts and functions manipulated those specific body parts more than others with more positive feelings about their specific body parts and functions, they did show that the more dissatisfied a person is with his/her body overall, the more manipulating he/she does to his/her photos. It is interesting to note that previous studies from both McClean et al. (2015) and Cohen et al. (2018) found that those who manipulated photos before sharing reported greater body and eating concerns. The

participants in this study were asked to report the specific ways they manipulated their photos on their Instagram accounts. Specifically, it was found that the more negatively participants felt about their faces and stomachs, the more frequently they edited those body parts before posting photos online. It was also found that removing blemishes, adding makeup, whitening teeth, and cropping body parts out of photos were the most frequent manipulations reported by the participants. This is inconsistent with Chae (2017), who found that satisfaction with facial appearance had neither direct nor indirect effects on selfie-editing. No other body part assessed showed a significant relationship with editing frequency. Faces and stomachs are often the focal points of appearance during interactions, so it is not surprising that those who feel negatively about these body parts may want to change them for their photos.

Limitations and Future Directions

There are some limitations to the current study. First, although there were 81 participants, only 15 of them were males. This is important to note because males and females may engage in different photo editing behavior. Additionally, gender differences have been seen in relation to narcissistic traits. It could be considered that the restricted range of males contributed to the non-significant correlations. In the current study, although no gender hypotheses were posed, we did conduct the analyses with just the female participants ($n = 66$), but no different results were found compared to those using the full sample.

Additionally, 34% of the participants reported editing photos “*never*” or “*seldom*” (i.e., 1 or 2 on the Often Edit item), and 51.9% reported not editing (at all) any of their three Instagram photos that were assessed in this study. These data suggest the sample reported a relatively low rate of photo editing and might not be representative of individuals who edit their photos more frequently prior to posting on social media. Additionally, although 17% did report manipulating at least one of their Instagram photos in more than one way, it must be considered that it is impossible to know if the participants were being completely truthful, even though they were told that their responses would be anonymous. People may be embarrassed or ashamed if they change multiple aspects of their faces and bodies, which might explain why the blind observer reported higher frequencies of photo manipulations than the participants. Future research may benefit from assessing participants while they edit their photos, instead of evaluating the product that is posted online afterwards. Additionally, including a wider variety of people who edit their photos in a variety of ways may make the results more applicable. Perhaps specifically recruiting those who report frequent photo editing could be useful.

Further, there were 15 participants who reported that they had not posted photos on their Instagram accounts in the past three months. It is important to consider that both appearance and photo editing behavior can fluctuate over time. It is possible that people may edit their photos more or less now than they did they did in the past, so observing an account for an extended period of time may be beneficial. Additionally, this study only

assessed photos on Instagram. There are several social media platforms, so future research could evaluate posts on multiple social media accounts across participants.

It must also be considered that because there were so many factors included in the study, some of the correlations might have been found by chance alone. Specifically, the significant correlation between the Body Dissatisfaction subscale and the Photo Manipulations Questionnaire. Control for Type I error should be used throughout.

Lastly, this study was conducted in the winter, so most of the photos included participants who were dressed for the cold weather with most of their bodies covered in clothing. If it was conducted during the summer, or a time when the temperature was warmer, participants may have manipulated their photos differently due to more and potentially different body parts being visible. In other words, if the participants were posting pictures in swimsuits instead of sweaters, the likelihood of seeing more editing and manipulation done to photos may have been higher.

Overall, this study provides valuable information pertaining to how editing photos before posting them online is related to body satisfaction, body-esteem, self-esteem, and narcissism. Future research should focus on photo editing across different ages, ethnicities, genders, and social media platforms. This study specifically assessed college students, so forthcoming investigations should also assess if the results are generalizable to younger generations who may have different body perceptions as they navigate the puberty process, and who may utilize their social media accounts in different ways or with different frequencies than college students.

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APPENDICES

Appendix A
Demographic Form

Please answer the following questions:

What is your age (in years)? _____

Your current year in college (circle one):

Freshman

Sophomore

Junior

Senior

Graduate Student

Please indicate your gender (circle one):

Male

Female

Other: _____

I prefer not to respond

Please specify your ethnicity (circle one):

Asian/ Pacific Islander

Black or African American

Hispanic or Latino

Native American or American Indian

White

Other: _____

I prefer not to respond

For the following types of social media accounts, please answer each question for each type of account.

Please circle Y to indicate yes and N to indicate no.

	Do you have a social media account on the following websites?			Have you used this account in the past 3 months?			Have you posted a picture on this account in the past 3 months?	
Facebook	Y	N		Y	N		Y	N
Instagram	Y	N		Y	N		Y	N
Twitter	Y	N		Y	N		Y	N
Snapchat	Y	N		Y	N		Y	N
VSCO	Y	N		Y	N		Y	N

Do you have other social media accounts? If so, please list and answer each question about each account.

Other: Please specify				Have you used this account in the past 3 months?			Have you posted a picture on this account in the past 3 months?	
	Y	N		Y	N		Y	N
	Y	N		Y	N		Y	N
	Y	N		Y	N		Y	N
	Y	N		Y	N		Y	N
	Y	N		Y	N		Y	N

Appendix B

In this section are listed a number of body parts and functions.

Please read each item and indicate how you feel about this part or function of your own body using the following scale. Place a check mark in the corresponding box.

The scale ranges from *I have strong negative feelings* to *I have strong positive feelings*.

Item	I have: Strong Negative Feelings	I have: Moderate Negative Feelings	I have: No Feeling One Way or the Other	I have: Moderate Positive Feelings	I have: Strong Positive Feelings
1. Body scent					
2. Appetite					
3. Nose					
4. Physical stamina					
5. Reflexes					
6. Lips					
7. Muscular strength					
8. Waist					
9. Energy level					
10. Thighs					
11. Ears					
12. Biceps					
13. Chin					
14. Body build					
15. Physical coordination					

Item	I have: Strong Negative Feelings	I have: Moderate Negative Feelings	I have: No Feeling One Way or the Other	I have: Moderate Positive Feelings	I have: Strong Positive Feelings
16. Buttocks					
17. Agility					
18. Width of shoulders					
19. Arms					
20. Chest or breasts					
21. Appearance of eyes					
22. Cheeks/ cheekbones					
23. Hips					
24. Legs					
25. Figure or physique					
26. Sex drive					
27. Feet					
28. Sex organs					
29. Appearance of stomach					
30. Health					
31. Sex activities					
32. Body hair					
33. Physical condition					
34. Face					
35. Weight					

Appendix C

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

On the whole, I am satisfied with myself.	SA	A	D	SD
At times, I think I am no good at all.	SA	A	D	SD
I feel that I have a number of good qualities.	SA	A	D	SD
I am able to do things as well as most other people.	SA	A	D	SD
I feel I do not have much to be proud of.	SA	A	D	SD
I certainly feel useless at times.	SA	A	D	SD
I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
I wish I could have more respect for myself.	SA	A	D	SD
All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
I take a positive attitude toward myself.	SA	A	D	SD

Appendix D

This inventory consists of a number of pairs of statements with which you may or may not identify. Look at the two statements per each question and identify which is closer to your own feelings about yourself. For example, on number 12, if you identify more with "liking to have authority over people" than with "not minding following orders," then you would choose option A.

You may identify with both A and B. In this case you should choose the statement which seems closer to yourself. Or, if you do not identify with either statement, select the one which is least objectionable or remote. In other words, read each pair of statements and **then choose the one that is closer to your own feelings. Indicate your answer by circling the letter (A or B).** Please do not skip any items.

1. A. I have a natural talent for influencing people.
 B. I am not good at influencing people.

2. A. Modesty doesn't become me.
 B. I am essentially a modest person.

3. A. I would do almost anything on a dare.
 B. I tend to be a fairly cautious person.

4. A. When people compliment me I sometimes get embarrassed.
 B. I know that I am good because everybody keeps telling me so.

5. A. The thought of ruling the world frightens the hell out of me.
 B. If I ruled the world it would be a better place.

6. A. I can usually talk my way out of anything.
 B. I try to accept the consequences of my behavior.

7. A. I prefer to blend in with the crowd.
 B. I like to be the center of attention.

8. A. I will be a success.
 B. I am not too concerned about success.

9. A. I am no better or worse than most people.
 B. I think I am a special person.

10. A. I am not sure if I would make a good leader.
 B. I see myself as a good leader.

11. A. I am assertive.
 B. I wish I were more assertive.

12. A. I like to have authority over other people.
 B. I don't mind following orders.

13. A. I find it easy to manipulate people.
B. I don't like it when I find myself manipulating people.
14. A. I insist upon getting the respect that is due me.
B. I usually get the respect that I deserve.
15. A. I don't particularly like to show off my body.
B. I like to show off my body.
16. A. I can read people like a book.
B. People are sometimes hard to understand.
17. A. If I feel competent I am willing to take responsibility for making decisions.
B. I like to take responsibility for making decisions.
18. A. I just want to be reasonably happy.
B. I want to amount to something in the eyes of the world.
19. A. My body is nothing special.
B. I like to look at my body.
20. A. I try not to be a show off.
B. I will usually show off if I get the chance.

21. A. I always know what I am doing.
B. Sometimes I am not sure of what I am doing.
22. A. I sometimes depend on people to get things done.
B. I rarely depend on anyone else to get things done.
23. A. Sometimes I tell good stories.
B. Everybody likes to hear my stories.
24. A. I expect a great deal from other people.
B. I like to do things for other people.
25. A. I will never be satisfied until I get all that I deserve.
B. I take my satisfactions as they come.
26. A. Compliments embarrass me.
B. I like to be complimented.
27. A. I have a strong will to power.
B. Power for its own sake doesn't interest me.
28. A. I don't care about new fads and fashions.
B. I like to start new fads and fashions.

29. A. I like to look at myself in the mirror.
B. I am not particularly interested in looking at myself in the mirror.
30. A. I really like to be the center of attention.
B. It makes me uncomfortable to be the center of attention.
31. A. I can live my life in any way I want to.
B. People can't always live their lives in terms of what they want.
32. A. Being an authority doesn't mean that much to me.
B. People always seem to recognize my authority.
33. A. I would prefer to be a leader.
B. It makes little difference to me whether I am a leader or not.
34. A. I am going to be a great person.
B. I hope I am going to be successful.
35. A. People sometimes believe what I tell them.
B. I can make anybody believe anything I want them to.
36. A. I am a born leader.
B. Leadership is a quality that takes a long time to develop.

37. A. I wish somebody would someday write my biography.
B. I don't like people to pry into my life for any reason.
38. A. I get upset when people don't notice how I look when I go out in public.
B. I don't mind blending into the crowd when I go out in public.
39. A. I am more capable than other people.
B. There is a lot that I can learn from other people.
40. A. I am much like everybody else.
B. I am an extraordinary person.

Appendix E

Overall Editing Behavior Questionnaire

I want you to answer some general questions about any of the photos on any of your social media accounts (not just the ones being looked at in this study). Please circle the number that best corresponds with the following questions.

***Editing for this study refers to changing a photo in any way from its original form. This includes adding a filter, brightening, changing the color/ contrast/ saturation, cropping, highlighting, and/or sharpening a photo.**

How often do you edit your photos before posting them online?	Never 1	Seldom 2	Sometimes 3	Very often 4	Always 5
When you edit your photos, How frequently do you use the following apps to edit them?					
Perfect365	1	2	3	4	5
FaceTune (1/2)	1	2	3	4	5
VSCO	1	2	3	4	5
Afterlight	1	2	3	4	5
AirBrush	1	2	3	4	5
Photo Wonder	1	2	3	4	5
PicsArt	1	2	3	4	5

MakeupPlus	1	2	3	4	5
Pitu	1	2	3	4	5
Other (please write all that you use):					
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

When you edit a photo:	Never	Seldom	Sometimes	Very often	Always
How often do you edit your face? (overall)	1	2	3	4	5
How often do you edit your eyes?	1	2	3	4	5
How often do you edit your cheeks/cheekbones?	1	2	3	4	5
How often do you edit your lips?	1	2	3	4	5
How often do you edit your chin?	1	2	3	4	5

When you edit a photo:	Never	Seldom	Sometimes	Very often	Always
How often do you edit your ears ?	1	2	3	4	5
How often do you edit your shoulders ? (width)	1	2	3	4	5
How often do you edit your chest or breasts ?	1	2	3	4	5
How often do you edit your biceps ?	1	2	3	4	5
How often do you edit your arms ? (overall)	1	2	3	4	5
How often do you edit the appearance of your stomach ?	1	2	3	4	5
How often do you edit your waist ?	1	2	3	4	5
How often do you edit your buttocks ?	1	2	3	4	5

When you edit a photo:	Never	Seldom	Sometimes	Very often	Always
How often do you edit your thighs ?	1	2	3	4	5
How often do you edit your legs ? (overall)	1	2	3	4	5
How often do you edit your feet ?	1	2	3	4	5
How often do you edit your overall build/figure ?	1	2	3	4	5

Appendix F

Photo Manipulations Questionnaire

Please log onto your Instagram and pull up the three most recent photos you have uploaded. The photos must include humans (yourself or others).

For **photo number 1** please report:

Number of likes received:	
What app(s) you used to edit:	
Approximate amount of time spent editing:	

Please put a check mark by the types of manipulations you have done to this photo:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/ removed double chin(s)		Used methods to thin face/ define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/ blurred blemishes; corrected skin	
Enhanced size of breasts		Decreased size of breasts		Made arms look skinnier/ more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

For **photo number 2** please report:

Number of likes received:	
What app(s) you used to edit:	
Approximate amount of time spent editing:	

Please put a check mark by the types of manipulations you have done to this photo:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/ removed double chin(s)		Used methods to thin face/ define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/ blurred blemishes; corrected skin	
Enhanced size of breasts		Decreased size of breasts		Made arms look skinnier/ more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

For **photo number 3** please report:

Number of likes received:	
What app(s) you used to edit:	
Approximate amount of time spent editing:	

Please put a check mark by the types of manipulations you have done to this photo:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/removed double chin(s)		Used methods to thin face/define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/blurred blemishes; corrected skin	
Enhanced size of breasts		Decreased size of breasts		Made arms look skinnier/more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

Appendix G

Blind Observer Photo Manipulations Questionnaire

BLIND OBSERVER: Look at **Photo #1**. Place a check mark next to any of the following ways it appears the photo has been edited/manipulated:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/removed double chin(s)		Used methods to thin face/define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/ blurred blemishes; corrected skin	
Enhanced size of breasts		Decreased size of breasts		Made arms look skinnier/ more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

BLIND OBSERVER: Look at **Photo #2**. Place a check mark next to any of the following ways it appears the photo has been edited/manipulated:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/removed double chin(s)		Used methods to thin face/define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/blurred blemishes; corrected skin	
Enhanced size of breasts		Decreased size of breasts		Made arms look skinnier/more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

BLIND OBSERVER: Look at **Photo #3**. Place a check mark next to any of the following ways it appears the photo has been edited/manipulated:

Added make-up		Whitened teeth		Changed eye color		Changed hair (in any way)	
Erased/removed double chin(s)		Used methods to thin face/define jaw(s)		Used methods to thicken face(s)		Changed the structure of your (or others) face(s)	
Changed the size/shape of nose(s)		Enhanced size of lips		Decreased size of lips		Removed/blurred blemishes; corrected skin	
Enhanced size of chest/breasts		Decreased size of chest/breasts		Made arms look skinnier/more toned		Made arms look thicker	
Made torso look thicker		Made torso look thinner		Erased fat on stomach		Added abs to stomach	
Enhanced size of hips		Made hips look smaller		Enhanced size of buttocks		Made buttocks look smaller	
Made thighs look thicker		Made thighs look thinner		Made legs look more toned overall		Cropped body parts out of photo	

APPENDIX H

CONSENT FOR PARTICIPATION FORM

IRB

INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129



IRBF004IC: INFORMED CONSENT – Exempt
INFORMED CONSENT- RESEARCHERS’ DISCLOSURES
(Part A – Participant’s Copy)

Study Title	<i>Picture, Edit, Post, Repeat: Are Photo Editing and Manipulation Associated with Body Dissatisfaction and Low Self-Esteem?</i>	Office Use
Principal Investigator	Kolleen Duffy	IRB ID: 19-1137
Faculty Advisor	Kimberly Ujcich Ward	Approval Date: 01/14/2019 Expiration Date: N/A
Contact Information	kd4h@mtmail.mtsu.edu; kimberly.ward@mtsu.edu	

Dear Participant,

On behalf of the research team, the Middle Tennessee State University (MTSU) would like to thank you for considering to take part in this research study. You have been contacted by the above identified researcher(s) to enroll as a participant in this study because you met its eligibility criteria.

This consent document describes the research study for the purpose of helping you to make an informed decision on whether to participate in this study or not. It provides important information related to this study, possible interventions by the researcher(s) and proposed activities by you. This research has been reviewed by MTSU’s internal oversight entity - Institutional Review Board (IRB) - for ethical practices in research (visit www.mtsu.edu/irb for more information).

As a participant, you have the following rights:

- You should read and understand the information in this document before agreeing to enroll
- Your participation is absolutely voluntary and the researchers cannot force you to participate
- If you refuse to participate or to withdraw midway during this study, no penalty or loss of benefits will happen
- The investigator MUST NOT collect identifiable information from you, such as, name, SSN, and phone number
- The researcher(s) can only ask you to complete an interview or a survey or similar activities and you must not be asked to perform physical activities or offer medical/psychological intervention
- Any potential risk or discomforts from this study would be lower than what you would face in your daily life

After you read the following disclosures, you can agree to participate in this study by completing "Part B" of this informed consent document. You do not have to do anything further if you decide not to participate.

1. What is the purpose of this study?

The purpose of this study is to evaluate the potential relationship between photo editing of images posted on social media and various personality factors, including self esteem and body perception.

2. What will I be asked to do in this study?

You will be asked to log into your own Instagram account and pull up your three most recent photos and answer some questions about the images. You will also be asked to fill out a number of surveys pertaining to social media and photo editing use, self-image, self-esteem, and various personality factors.

3. How many times should I participate or for how long?

Participation in this study is one time, and will take approximately 40 minutes of your time.

4. What are the risks and benefits if I participate?

There are no foreseen risks to participating in this study.

5. What will happen to the information I provide in this study?

The information you provide will be combined with information from other participants to allow group data analysis. Your individual responses will be anonymous. The group data will be used to help us learn more about relations between social media photo editing and personality variables.

6. What will happen if I refuse to participate and can I withdraw if I change my mind in the middle?

You may choose to refuse to participate in the study without any negative consequences. You may also withdraw from the study at any time during the study without negative consequences.

7. Whom can I contact to report issues and share my concerns?

You can contact the researcher(s) by email or telephone (kd4h@mtmail.mtsu.edu; kimberly.ward@mtsu.edu; 615-898-2188). You can also contact the MTSU's Office of Research Compliance by email – irb_information@mtsu.edu. Report compliance breaches and adverse events by dialing 615 898 2400 or by emailing compliance@mtsu.edu.

INVESTIGATOR's SIGNATURE	FACULTY ADVISOR's SIGNATURE	DATE
NON-IDENTIFIABLE PARTICIPANT ID#		

Confidentiality Statement:

All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised, for example, your information may be shared with the MTSU IRB. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigator as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact our Office of Compliance at (615) 898 2400.

Compensation:

Unless otherwise informed to you by the researcher(s), there is no compensation for participating in this study. The investigator must disclose if the participant would be compensated in the benefits section.

Study-related Injuries:

MTSU will not compensate for study-related injuries.

Exemption Criteria:

This study was submitted to the MTSU IRB – an internal oversight entity to oversee research involving human subjects. The IRB has determined that this investigation consists of lower than minimal risk and it is exempt from further IRB processes based on the criteria: *“Category 1 - Educational Settings & Instructional Strategies.”*

Note to the Participant

You do not have to do anything if you decide not to participate in this study. But if you wish to enroll as a participant, please complete “Part B” of this informed consent form and return it to the researcher. Please retain the signed copy of “Part A” for your future reference.

Appendix I

MTSU IRB APPROVAL FORM

**IRB****INSTITUTIONAL REVIEW BOARD**

Office of Research
 Compliance, 010A
 Sam Ingram Building,
 2269 Middle
 Tennessee Blvd
 Murfreesboro, TN
 37129

IRBN007 – EXEMPTION DETERMINATION NOTICE

Thursday, January 17, 2019

Principal Investigator	Kolleen Duffy (Student)
Faculty Advisor	Kim Ujcich Ward
Co-Investigators	NONE
Investigator Email(s)	<i>kd4h@mtmail.mtsu.edu; kimberly.ward@mtsu.edu</i>
Department	Psychology
Protocol Title	<i>Picture, edit, post, repeat: Are photo editing and manipulation associated with body dissatisfaction and low self-esteem?</i>
Protocol ID	19-1137

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXEMPT** review mechanism under 45 CFR 46.101(b)(2) within the research category (2) *Educational Tests*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from further IRB review***	Date	1/17/19
Date of Expiration	NOT APPLICABLE		
Sample Size	125 (ONE HUNDRED TWENTY-FIVE)		
Participant Pool	Healthy Adults (18 or older) - MTSU students		
Exceptions	MTSU SONA policies allowed		
Mandatory Restrictions	<ol style="list-style-type: none"> 1. Participants must be 18 years or older 2. Informed consent must be obtained from the participants 3. Identifying information must not be collected 		
Restrictions	All restrictions for exemption apply.		
Comments	NONE		

***This exemption determination only allows above defined protocol from further IRB review such as continuing review. However, the following post-approval requirements still apply:

- Addition/removal of subject population should not be implemented without IRB approval
- Change in investigators must be notified and approved
- Modifications to procedures must be clearly articulated in an addendum request and the proposed changes must not be incorporated without an approval
- Be advised that the proposed change must comply within the requirements for exemption
- Changes to the research location must be approved – appropriate permission letter(s) from external institutions must accompany the addendum request form
- Changes to funding source must be notified via email (irb_submissions@mtsu.edu)
- The exemption does not expire as long as the protocol is in good standing
- Project completion must be reported via email (irb_submissions@mtsu.edu)
- Research-related injuries to the participants and other events must be reported within 48 hours of such events to compliance@mtsu.edu

Post-approval Protocol Amendments:

The current MTSU IRB policies allow the investigators to make the following types of changes to this protocol without the need to report to the Office of Compliance, as long as the proposed changes do not result in the cancellation of the protocols eligibility for exemption:

- Editorial and minor administrative revisions to the consent form or other study documents
- Increasing/decreasing the participant size

Only THREE procedural amendment requests will be entertained per year. This amendment restriction does not apply to minor changes such as language usage and research

Date	Amendment(s)	IRB Comments
NONE	NONE.	NONE

The investigator(s) indicated in this notification should read and abide by all applicable post-approval conditions imposed with this approval. [Refer to the post-approval guidelines posted in the MTSU IRB's website](#). Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. All of the research-related records, which include signed consent forms, current & past investigator information, training certificates, survey instruments and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University