The Effects of Facebook on Users' Body Image, Eating Patterns, & Self-Esteem

by Ashley Hemrich, Bachelor of Science

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Advisory Committee:

Laura Pawlow, Chair

Andrew Pomerantz

Daniel Segrist

Graduate School
Southern Illinois University Edwardsville
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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

ABSTRACT

THE EFFECTS OF FACEBOOK ON USERS' BODY IMAGE, EATING PATTERNS, AND SELF-ESTEEM

by

ASHLEY HEMRICH

Chairperson: Professor Laura A. Pawlow

The purpose of this study was to determine whether viewing the Facebook profiles of women differing in levels of attractiveness and thinness would influence the viewer's self-esteem, eating patterns, and body image. Specifically, it was hypothesized that viewing the profile of an attractive, thin woman would result in the reduction of self-esteem and body image with an increase in eating disorder-related thoughts and behaviors. While viewing the Facebook profile of a heavier and less attractive woman would bolster self-esteem and body image while reducing disordered eating thoughts and behaviors in a college-aged, female population. Contrary to the hypotheses, none of the analyses revealed a significant interaction. However, there was a significant main effect for time on eating attitudes and behaviors, suggesting that participants' attitudes toward eating became significantly worse over time. This study is unique in that it is the first to experimentally test whether the attractiveness level of the viewed Facebook profile would affect body image, self-esteem, and/or eating attitudes.

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CHAPTER I

INTRODUCTION

The purpose of this study was to determine whether viewing the Facebook profiles of women differing in levels of attractiveness and thinness would influence the viewer's self-esteem, behaviors and thoughts regarding eating, and body image. Specifically, it was hypothesized that viewing the profile of a very attractive and thin woman would result in a reduction of self-esteem and body image and an increase in eating-disorder related thoughts and behaviors while viewing the profile of a heavier and less attractive woman would bolster self-esteem and body image and reduce eating-disorder related thoughts and behaviors in a college aged, female population.

The hypotheses regarding self-esteem and body image were based on Festinger's (1954) social comparison theory which states that individuals evaluate their own abilities by comparing themselves to others. For example, Jones (2002) studied 174 adolescents in regard to social comparisons among celebrities and same-sex peers. Participants were asked to rate how frequently they compare their attractiveness to their fellow peers and to celebrities. Students of both genders who reported increased social comparison to peers were more likely to feel dissatisfied with their bodies. For girls, the negative attributes of weight and shape increased significantly more than their male counterparts' did. The hypothesis regarding disordered eating was based on research suggesting that women's eating habits are related to how they feel about themselves, particularly in terms of their bodies (e.g., Furnham, Badmin, & Sneade, 2002).

Because Facebook and social networking in general are relatively new concepts, only a small amount of literature exists on these topics. Therefore, the following literature review begins with a brief history of social networking and Facebook and then provides an overview of the research that has been conducted with regard to Facebook use.

CHAPTER II

REVIEW OF LITERATURE

History of Social Networking

Social networking websites have become popular venues for Internet users to establish and maintain connections with others (Ellison, Steinfield, & Lampe, 2007). Sites, such as Facebook, MySpace, Friendster, LinkedIn, and others, have allowed users to expand social networks, develop work-related relationships, discover romantic ties, and connect with others based on shared ideas and interests (Steinfield, Ellison, & Lampe, 2008). The technological basis for most social networking sites is very similar; however, the cultural components vary from site to site (Boyd & Ellison, 2008). Social network users may choose to connect with others based upon past relationships or with the intention of meeting new people (Boyd & Ellison). Internet-based social networking sites originated from the idea that individuals could "construct public or semi-public profiles within a bounded system, articulate a list of users with whom they have a connection, and view and maintain a connection with others based on interests within the site" (Steinfield et al., 2008, p. 434).

What makes social networking sites unique is the fact that users have the ability to meet new people as well as make their social networks visible to other users. This visibility can act as a connection that binds individuals who might otherwise have limited contact with each other due to time, geography, or other constraints (Boyd & Ellison, 2008). For many sites, users are asked to create a profile in which they describe their interests, provide photographs, display their demographics, and/or apply multimedia

content. Upon joining a social networking site, users are asked to identify others with whom they have a relationship or would like a relationship. While sites differ in terminology, a common term for these other users is "friends," and these relationships are bi-directional. The user's friend list is an important aspect of social networking sites because it is visible to all users within the network. Friends can view and navigate through the lists to search for particular users (Boyd & Ellison). Furthermore, many social networking sites allow users to leave messages on their friends' profiles to informally communicate with them. This feature can also be utilized as a private message mechanism, which is similar to webmail (Boyd & Ellison). As social networking sites become more popular, the aim to support relationships by integrating interests and maintaining connections continues to be at the forefront of this phenomenon (Ellison et al., 2007).

History of Facebook

Since 2004, Facebook has been recognized as one of the most popular social networking sites among college students (Ellison et al., 2007; Steinfield et al., 2008). Created by Mark Zuckerberg, at the time a Harvard University student, Facebook currently has more than 500 million users nationwide (Ellison et al.; Nadkarni & Hofmann, 2012). Facebook was conceptualized from Zuckerberg's intuition that students at Harvard University wanted an additional means of identifying and socializing with other students. His intuition proved correct; currently Facebook has a 90% usage rate among undergraduate college students around the globe (Steinfield et al.) and over 2,000 colleges and universities nationwide use it as a tool for integrating campus activities and social events. Based upon the success of the college version, Zuckerberg and colleagues

launched a high school version of Facebook in 2005 (Ellison et al.). In 2006, Zuckerberg commenced a version for commercial organizations to promote and inform business organizations of their expertise (Ellison et al.), and in fewer than ten years over 22,000 organizations have adopted the ability to reach out to other groups and associations via social networking.

Among other social networking sites, Facebook is the most popular as of May, 2011 with 157.2 million visitors per month (Nadkarni & Hofmann, 2012). Spending an average of 117 minutes daily surfing the website, users have integrated Facebook into their daily routines (Thompson & Lougheed, 2012). Lampe, Ellison, and Steinfield (2004) found that 95.5% of their sample of undergraduate university students indicated that they were Facebook users; of those, 12% reported spending more than one hour a day surfing the website. Similar findings by Raacke and Bonds-Raacke (2008) indicated that of their 101 participants, 87.1% utilized a Facebook account and reported logging into their accounts at least four times daily. These studies show that the amount of time users occupy on Facebook has greatly increased since its origination in 2004. As of March 2010, Facebook surpassed Google as the most popular website in the United States accounting for 7.07% of all U.S. web travel (Wilson, Gosling, & Graham, 2012).

Demographics of Facebook Users

Few studies have been conducted on the demographics of Facebook users (Nadkarni & Hofmann, 2012). Research suggests that Facebook users vary by race, ethnicity, age, and gender. However, Duggan and Brenner (2012) found that 72% of Facebook users were Caucasian females between the ages of 18 and 29 (86%). It is interesting to note

that research has begun to indicate that those who live in an urban setting are more likely to utilize Facebook, compared to suburban and rural areas (Duggan & Brenner). Studies have indicated that those with a median household income of $20,000 or less, mainly undergraduate college students, have been found to utilize Facebook frequently (Ellison et al., 2007). However, research has also shown that 73% of Facebook users earn a median household income of $75,000 or more, suggesting that the site is popular with people across many economic backgrounds (Duggan & Brenner).

Some research has focused on how Facebook use differs across various cultures (Nadkarni & Hofmann, 2012). When analyzing Facebook profiles of African Americans, Hispanic Americans, and Native Americans, Hargittai (2008) found that these ethnic groups greatly display their cultural selves through language, tradition, and religion, more so than Caucasian Americans, while Karl, Peluchette and Schlaegel (2010) found that Caucasian American students were more likely to display oppressive and derogatory information via their Facebook profiles compared to German students. It is interesting to note that American students were more likely to embrace status updates and photographs compared to students from the United Kingdom, Greece, and France who endorsed groups and interests to be the most important aspects of the website (Nadkarni & Hofmann).

Reasons to Use Facebook

Papacharissi and Rubin (2000) suggest that users utilize Facebook to "pass time, seek information, entertain themselves, and develop interpersonal bonds" (p. 189), but the most common use of Facebook is to form and maintain social capital (Steinfield et al.,

2008). According to Ellison and colleagues (2007), social capital refers to "the resources accumulated through the relationships among people" (p. 1145). Burke, Kraut, and Marlow (2011) suggest that a user's Facebook social capital can be defined by one's position in the social network, as well as the quantity and quality of relationships. It is important to note that social capital can be characterized in both online and offline contexts. In addition, social interactions may be supplemented by online social networking due to geographical constraints. According to Steinfield and colleagues, Facebook use has been found to emphasize emotional connections with individuals, as well as heighten heterogeneous ties within social networks. In addition, cross-sectional research has shown that people who increasingly use Facebook have significantly greater social interactions compared to their counterparts. According to Raacke and Bonds-Raacke (2008), 96% of Facebook users reported having an account to stay connected with past and present relationships.

Facebook can also function as a tool to help form new relationships by allowing users to track interests and activities of other individuals. Lampe and colleagues (2004) suggest that this type of "surveillance" encourages users to search for individuals outside of their social network with whom they may generate an offline connection. It is interesting to note that this "social searching" aspect is rather pertinent to most social networking sites and reinforces the ability to form and maintain relationships. Many users track others' activities via users' main page and/or user profile, which can help them generate perceptions based upon the information at hand. With that, users' profiles provide others with personal information that generally expresses honesty, while also encouraging reciprocal self-disclosure (Burke et al., 2011). Whether it is posting a

comment on a user's profile, clicking "like" on a specific piece of information regarding the user's daily life, or tagging photos, users are emphasizing the importance of the relationship, which creates stronger bonds among each other.

While some are concerned that online interactions detract from face to face contact and thereby social capitol (Ellison et al., 2007), others have argued that online social interactions do not diminish social capital (Wellman, Haase, Witte, & Hampton, 2001). For instance, Burke et al. (2011) suggest that users' main page or "News Feed" is similar to small talk, in that users find out information via informal communication. On the other hand, Knapp and Vangelisti (2003) argue that face-to-face small talk facilitates a more established and reciprocal relationship. To counter, some researchers argue that live streaming of ambiguous information via status updates is cost effective and efficient. It is easier for individuals to communicate with one another, as opposed to socializing offline which requires collaborative scheduling. Burke et al. also argue that social networking tends to benefit users by allowing them to manage a greater circle of friends and acquaintances.

Negative Effects Associated with Facebook Use

Privacy concerns

As Facebook grows in popularity, significant privacy issues have been identified, especially for young adults (George, 2006; Kornbulm & Marklien, 2006). Information exchanged between users and third party applications may not always be private such that online conversations among users could be recorded by third party applications without their consent (Leitch & Warren, 2009). These third party applications may include

games, quizzes, and advertisements that are in conjunction with Facebook (Hull & Lipford, 2011). Gross and Acquisiti (2005) surveyed 4,000 university students regarding their knowledge of privacy settings within social networking sites. A majority of the students did not realize that hackers can reconstruct users' social security numbers by information found in their profiles, including last name, hometown, and date of birth (Gross & Acquisiti). Facebook has continued to add features in which users can strictly enforce privacy settings by limiting profile views and remaining unsearchable (Cain, 2008). However, users may unintentionally forget to update their privacy settings, in which they become more susceptible to releasing personal information.

Currently, a debate has surfaced regarding the access employers should have regarding potential employees' Facebook profile information (Cain, 2008). If personal information is deemed public in nature, then is it a violation of privacy for an employer to access a potential employee's social networking profile? What many users perceive as harmless and humorous in nature may actually be perceived differently by authority figures, including employers, teachers, parents, etc., which can potentially harm students' reputations (Cain). According to Cain, administrators have suspended and/or expelled students based on information on their Facebook profiles, including but not limited to, alcohol and cannabis violations, as well as discriminatory threats and allegations. "Some students reject the idea that outsiders should be able to use information posted on social networking sites and feel that basing judgments on and making inferences for user's comments or photographs on Facebook is unfair and should be illegal" (Cain, 2008, p.3). The general consensus of many students is that Facebook is intended for a particular audience which does not include employers or professional administrators.

A current scheme that is becoming increasingly popular is the act of "phishing," in which users create inaccurate profiles to depict different identities (Boyd & Ellison, 2008). Many researchers have advocated for some form of punishment due to the fact that a majority of the false profiles constitute a form of identity theft; users post pictures and utilize personal information of other individuals as depictions of themselves. Jagatic, Johnson, Jakobson, and Menczer (2007) implemented a study in which they created a false profile to depict a "phishing" scam. They found that the users who had befriended the counterfeit profile released an abundance of personal information, more so than they would have to someone they believed was a complete stranger. However, it is interesting to note that the students alleged they were fully aware of potential online privacy threats and had taken active roles in minimizing the release of personal information (Boyd & Ellison).

Another privacy issue that is primarily associated with Facebook is the source of tension generated from an internal personal issue that is made external within the social network. For example, a student tells her best friend that she was raped (internal issue) and the friend posts a link to a website regarding seeking help for rape victims on the student's profile (external issue). In this case, the friend's use of Facebook blurred the lines between the online and offline personal relationship between the two students (Hull & Lipford, 2011).

Physiological concerns

Facebook use has actually been linked to physiological problems in some users. In one very unique situation, D'Amato, Liccardi, Cecchi, Pellegrino, and D'Amato

(2010) reported a case study of a young man and found that Facebook seemed to be a trigger for his asthma attacks. The presenting problem originated from his girlfriend ending their relationship and deleting him as a friend on Facebook. Upon his realization of these circumstances, he began to hyperventilate and proceed into an asthma attack. Researchers observed his "peak expiratory flow before and after internet login" for a few weeks (p. 1). The asthma attacks subsided after the young man did not login to Facebook after a few weeks of observation (D'Amato et al.). After controlling for confounds and conflicts-of-interest, researchers concluded that psychological stress from Facebook use attributed to the asthma exacerbations.

In a more general fashion, stress associated with Facebook use has been linked to health issues, presumably via a weakened immune system. Campisi et al. (2012) found that college students with many Facebook friends presented with a greater incidence of upper respiratory infections. Healthy undergraduate students were interviewed once weekly for ten weeks to check for upper respiratory infections. Campisi and colleagues found that students with larger social networking bases had increased frequencies of upper respiratory infections. This is an interesting finding given that "real life" social support tends to boost immune functioning (Vissoci Reiche, Odebrecht Vargus Nunes, & Kaminami Morimoto, 2004). Respondents revealed that they have experienced Facebook-induced distress from the time involved in such things as receiving privacy updates, replying to messages, renewing trends and receiving updates about current events (Campisi et al.). The researchers concluded that a clear association exists between psychological stress resulting from a large social network and physiological health and wellness.

Facebook use has also been linked to poor sleep quality. Wolniczak et al. (2013) examined sleeping patterns and Facebook dependence among 418 undergraduate students at a university in Peru. Researchers found that 8.6% of respondents were Facebook dependent, while 69.4% suffered from poor sleep quality. Those with Facebook dependence issues were 1.3 times more likely to have poor sleep quality. Researchers also found that students with Facebook dependence issues tended to have elevated levels of daily dysfunction (i.e. fatigue, lethargy, poor concentration and memory, etc.) as opposed to students without dependency. The researchers concluded that excessive Facebook use and poor sleep quality greatly affect both physiological and psychological functioning.

Huang et al. (2013) sampled 1,795 high school students and found that those with a greater number of friends who posted pictures of alcohol and/or drugs were significantly more likely to report that they smoke cigarettes and drink alcohol. The researchers concluded that Facebook use could promote alcohol and drug use in adolescents. Taken together, these preliminary studies indicate that Facebook use may impact physical health.

Psychological concerns

Similarly, growing evidence suggests that Facebook use could be related to psychological well-being. Nadkarni and Hofmann (2012) found that personality characteristics such as extraversion, introversion, neuroticism, conscientiousness and openness to experience significantly contributed to increased Facebook use. Wilson, Fornasier, and White (2010) found that individuals who scored high on the extraversion

scale of the NEO-PI-R (Costa & McCrae, 1992b) and low on self-esteem (Coopersmith Self-Esteem Inventory; Coopersmith, 1981) were more likely to become reliant on Facebook. Using the Narcissistic Personality Inventory (Raskin & Hall, 1979), Buffardi and Campbell (2010) found a correlation between Facebook use and narcissism, suggesting that features that promote self-presentation such as Facebook profiles, friend representation, wall posts and photographs, significantly reflect this personality characteristic in users.

Previous research has concluded that between 8% and 50% of college students report problems associated with maladaptive social networking use. Kraut et al. (1998) found that increased Facebook use contributed to higher instances of depression, loneliness, and stress. After controlling for participants' emotions prior to the study, Kross et al. (2013) found after engaging in Facebook use, participants generally felt depressed throughout the rest of the day. Additionally, after a two week observation, Kross and colleagues found that increased Facebook use predicted a decrease in life satisfaction among the participants (N=79).

"Facebook addiction," a dependence mechanism that mirrors symptoms of many other addictive behaviors, has developed into an increasing phenomenon among users (Kittinger, Correia, & Irons, 2012). "Facebook addiction" can be characterized as an "urge-driven disorder" (Karaiskos, Tzavellas, & Paparrigopoulos, 2010, p. 855) and many have speculated that it should be regarded as a diagnosable condition. Researchers have found that those with "Facebook addiction" display similar symptomotology as individuals with diagnosable compulsive and addictive conditions (Kittinger et al.). However, it is interesting to note that many users do not identify their Facebook use as

"addictive," but rather simply a mechanism to stay connected within their social networks. "Facebook addiction" has been linked to a variety of other psychological disorders including Substance Abuse, Attention Deficit Hyperactivity Disorder (ADHD), and Social Phobia. Thompson and Lougheed (2012) found that 47.76% of female users endorsed the statement, "Sometimes I feel like I am addicted to Facebook." Kittinger and colleagues examined 281 undergraduate students and found that 1 in 6 of the participants presented with interpersonal issues relating to "Facebook addiction."

Body image/self-esteem concerns

Not surprisingly, self-esteem and body image issues have also been found to be related to Facebook use (Nadkarni & Hofmann, 2012). Social comparison theory derives from the idea that individuals evaluate their own abilities by comparing themselves to others in order to reduce uncertainty and define their self-concepts (Festinger, 1954). Viewing others' Facebook profiles provides a situation in which comparing oneself to others would be a common reaction. Huang (2010) found that psychological issues such as self-esteem, depression, and life satisfaction were highly correlated with maladaptive Facebook use, which is defined as "the tendency to engage in social comparison and elicit negative social evaluations on Facebook (Smith, et al., 2013, p. 5).

On the other hand, Yu, Tian, Vogel, and Kwok (2010) found a positive relationship between Facebook use and self-esteem suggesting that Facebook can be beneficial to an individual's socialization, as well as his or her psychological well-being. And Steinfield et al. (2008) found that individuals with low self-esteem appear to benefit more from Facebook than those with high self-esteem.

Forest and Wood (2012) surveyed 80 undergraduate Facebook users to examine whether individuals with low self-esteem were more likely to use Facebook as a means to "safely" engage in self-disclosure (i.e. in a manner which would make them less likely to feel embarrassed or rejected). Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965); a Facebook perception measure (generated by the researchers) that included questions relating to the degree in which Facebook allows users to express themselves and connect with others (i.e. "I relate to people with the same music interest by looking at their profile pages;"), and a self-report questionnaire regarding self-disclosure via Facebook including items, such as "Posting on Facebook makes me feel less self-conscious;" and "Posting on Facebook means I don't have to see a friend's reaction to my point-of-view." This measure was also created by the researchers. Forest and Wood found that participants with low self-esteem were more likely to use Facebook as a "safe" means of self disclosure compared to their high-esteem counterparts, thus openly facilitating self-expression (Forest & Wood). The comfort that those with low self-esteem feel in self-disclosing in a "safe" environment may actually be harmful to their social network due to their tendency to make status updates that are higher in negativity, compared to their high esteem counterparts (Forest & Wood). These findings suggest that self-esteem could moderate the relationship between social capital and Facebook use (Ellison et al., 2007), contradicting a previous finding that users with high self-esteem profited more from Facebook use (Kraut et al., 2002).

Mehdizadeh (2010) surveyed 100 undergraduate students regarding their Facebook use, self-esteem, and narcissistic personality traits. Mehdizadeh found a significant negative correlation between users' self-esteem and the amount of times

logged into Facebook, suggesting that individuals who have low self-esteem tend to spend more time browsing their friends' activity on Facebook. Ellison and colleagues imply that this finding could be due to the fact that those with low self-esteem may use Facebook and other social networking sites to overcome face-to-face barriers; suggesting that those who struggle with maintaining interpersonal relationships may actually benefit from Facebook use due to their difficulty forming meaningful relationships in "real life." However, this can also present an issue because those with low self-esteem may feel increased pressure to "belong" in online forums which could potentially be anxiety producing (Nadkarni & Hofmann, 2011).

According to Smith and colleagues (2011), individuals with low self-esteem were more likely to post negative comments about themselves and receive less positive feedback than their high esteem counterparts, suggesting that the need to "belong" may not have helped them gain social acceptance. Clerkin, Smith, and Hames (2013) found that excessive reassurance seeking via Facebook predicted decreases in self-esteem, suggesting that individuals who may highly benefit from Facebook use actually impair their efforts to have fulfilling interpersonal relationships (Clerkin et al.). Thus, Facebook appears to have the unique potential to both help and hinder those who struggle with interpersonal relationships and low self-esteem.

Social comparisons via Facebook have also been linked to disordered eating symptoms and poor body image. Thompson and Lougheed (2012) surveyed 268 college students using the Facebook Intensity Scale (Ellison, et al. 2007) and the Facebook Compulsion Inventory (Pile, 2009). They found that 10% of women endorsed the statement, "The pictures others post on Facebook give me a negative self body image,"

suggesting that Facebook use can have a negative impact on body image among users, at least in a small percentage of college-age women. Hopwood, Clarke, and Perez (2007) studied binge-eating, purging, and interpersonal problems in 517 undergraduate female students using The Eating Disorder Inventory-III (EDI III; Garner, et al., 1983) and the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). They found that maladaptive Facebook use coupled with binge-eating and purging were likely to contribute to a slew of interpersonal problems for users, including relationship issues, emotion deregulation, and social skills deficits (Hopwood, et al.).

Tiggemann and Slater (2013) surveyed 1,087 adolescent females regarding their Internet use and body image concerns. Participants were asked to report the average amount of time they spend on social networking sites each day. Results indicated the 75.1% have an active Facebook profile and spend an average of 92.3 minutes browsing the website daily. To analyze beauty ideals and body image concerns, participants completed the Sociocultural Attitudes toward Appearance Questionnaire (Heinberg, Thompson, & Stormer, 1995); the Objectified Body Conscious Scale (Lindberg, Hyde, & McKinley, 2006); and the EDI-III (Garner, et al.). Tiggemann and Slater found that Facebook users scored significantly higher on the drive for thinness and body surveillance scales compared to their non-user peers suggesting that Facebook use is related to body dissatisfaction. These findings indicate that social networking sites have the potential to negatively impact user's psychological health and well-being, particularly their levels of self-esteem and body image

Gonzales and Hancock (2011) studied 63 university students to examine objective self-awareness. Participants in the first experimental group were asked to view their

personal Facebook profiles, while participants in the second experimental group looked at their reflection in a mirror. Gonzales and Hancock proposed that individuals who viewed their personal profiles would have higher self-esteem compared to those who viewed themselves in a mirror. Participants were asked to login to their Facebook accounts and observe their own personal profiles for three minutes. Participants in the second group observed their reflection in a mirror for three minutes. After viewing their personal profiles or observing their reflection in the mirror, participants were asked to complete the Rosenberg Self-Esteem Scale (Rosenberg, 1964) and a Facebook use questionnaire (created by the researchers). Participants who viewed their personal profiles reported increased self-esteem compared to the mirror group, suggesting that "Facebook users may selectively present themselves in a positive light to increase personal self-esteem" (Gonzales & Hancock, 2011, p.81). However, while during the study the researchers prompted the participants to only observe their personal profiles; they found that many participants left their profile pages to view fellow peers' Facebook profiles. Interestingly, the results indicated that individuals who viewed a peer's profile had lower self-esteem than users who viewed only their own profiles, suggesting that perhaps viewing others' sites caused them to feel bad about themselves in comparison.

Smith, Hames, and Joiner Jr. (2013) surveyed 232 undergraduate women to examine whether comparisons via Facebook would predict eating disorder symptomotology. In particular, they were interested in whether maladaptive Facebook behaviors would influence body dissatisfaction. The researchers used a Maladaptive Facebook Usage Scale (generated by the researchers) which included questions such as, "Reading status updates of successful peers makes me feel down on myself" and "I often

write negative statuses about myself to see if my peers feel the same way about me;" the Eating Disorder Inventory (EDI-III; Garner, Olmsted, & Polivy, 1983); the Eating Disorder Examination Questionnaire-4 (EDEQ-4; Fairburn & Beglin, 1994); and the Depressive Interpersonal Relationship Inventory-Reassurance Seeking Subscale (DIRI-RS; Joiner, Alfano, & Metalsky, 1992). Participants were asked to complete the questionnaires via a secure website on two separate occasions, once as a baseline and then again after two to four weeks of engaging in normal Facebook activity. Smith et al. found that individuals who endorsed more maladaptive Facebook behaviors reported increased body dissatisfaction at both time points, which predicted restrictive eating, binge-eating, and purging episodes. While the participants were not instructed to view any particular type of profile, the researchers hypothesized that female users who browse photos of other thin and attractive females run the risk of engaging in disordered eating habits to bolster their own self-esteem (Smith et al.).

Current Study

Given the limited and contradictory nature of previous research on Facebook use and self-esteem, and the very limited nature of previous work on Facebook use, disordered eating, and body image, this study aimed to expand and clarify all three relationships. This study is most similar to previous work by Smith et al. (2013) and Gonzalez and Hancock (2011) in that it explored the relationships between Facebook use, disordered eating, body image, and self-esteem. However, this study is unique in that it was the first to experimentally test whether the attractiveness level of the viewed profile will affect these variables. It was hypothesized that women who were directed to view the profile of a very attractive, thin woman would have a reduction in self-esteem and body

image with a corresponding increase in eating-disorder related thoughts and behaviors and that women who were directed to view the profile of a woman who was heavier and less attractive would have an increase in self-esteem and body image with a corresponding decrease in eating-disorder related thoughts and behaviors. These hypotheses were based on the theory of social comparisons and body dissatisfaction among peer groups (Smith et al., 2013).

CHAPTER III

METHOD

Participants

This study incorporated the use of two experimental groups which were comprised of undergraduate women enrolled in Introductory Psychology classes during the spring of 2014 at a Midwestern middle-sized University. Because social comparison theory was invoked, it was important for the participants to identify with the imaginary women depicted in the two experimental Facebook conditions. Both profiles featured Caucasian women who appeared to be traditionally college-aged. Thus, only female Caucasian undergraduate students between the ages of 18 and 24 were allowed to participate. All participants earned credit toward their class research requirements for participation. The goal for participation was to run 100 students through the laboratory protocol with the hope of obtaining usable data for at least 50 participants in each condition. At this point in time 83 participants have been tested, with 50 in one group and 33 in the other. In order to match the sample size of the two groups, 33 participants were randomly selected from the group with 50 participants and the analyses in this document were conducted with a final sample size of 66 participants.

Materials

Body Esteem Scale (BES; Franzoi & Shields, 1984). The Body Esteem Scale is a measure designed to analyze one's attitudes towards the appearance or function of certain body features (Appendix A). The BES has two different versions that each emphasizes specific physical features of both genders. The male version's three subscales

include Physical Attractiveness, Upper Body Strength, and Physical Condition; the female version's include Sexual Attractiveness, Weight Concern, and Physical Condition (Cecil & Stanley, 1997). This study only utilized the female version. This measure consists of thirty-two questions that ask participants to rate the appearance or function of specific body features, such as lips, figure or physique, and thighs. Responses are based on a Likert-type scale ranging from one (have strong negative feelings) to five (have strong positive feelings). A higher score of the measure indicates higher body esteem.

The BES has been found to have adequate psychometric soundness. Cronbach's alpha was used to test internal consistency (α = .78 to .87) for both subscales. Test-retest reliability for the BES for both males and females ranges from r = .58 to .83 (males) to r = .75 to .81 (females) (Cecil & Stanley, 1997). Also, convergent validity was displayed by correlating measures of self-esteem, sexual attractiveness, and weight satisfaction with the female version, as well as measures of physical attractiveness and body build with the male version. Furthermore, discriminant validity was demonstrated by the lack of association between age, exercise frequency, and measures of self-consciousness with the BES scores for both males and females (Cecil & Stanley, 1997).

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The Rosenberg Self-Esteem Scale includes ten questions regarding general statements about one's self-esteem, self-confidence, and self-liking (Appendix B). Examples of questions on the RSES include "On the whole, I am satisfied with myself," I feel I do not have much to be proud of," and "I wish I could have more respect for myself." All items are based on a Likert-type scale ranging from one (strongly agree) to four (strongly disagree), and five

items need to be reverse scored. A higher score on the measure represents higher self-esteem.

The RSES has good psychometric properties. Cronbach's alpha was used to determine internal consistency ranging from $\alpha = .77$ to .88. Furthermore, high test-retest reliability for the RSES ranges from $r = .82$ to .88 (Sinclair et al., 2010). The RSES has shown significant construct validity when associated with measures of depression, physiological indicators of anxiety, and feelings of rejection. Additionally, the RSES displays convergent validity when correlated with measures of self-confidence, social acceptance, and other self-esteem scales (Sinclair, et al., 2010).

Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). The Eating Attitudes Test-26 includes twenty-six questions used to identify disordered eating habits and weight concerns in middle school, high school, and college students (Appendix C). The EAT-26 is used as a screening tool derived from a 40-item inventory not designed to elicit a clinical diagnosis of eating disorders (Garner, et al., 1982). Examples of questions on the EAT-26 include "I am terrified of being overweight," "I feel that food controls my life," and "I am occupied with a desire to be thinner." All items are based on a Likert-type scale ranging from one (Never) to six (Always). A higher score on the measure represents a higher risk of disordered eating patterns (Garner, et al.)

The EAT-26 has good psychometric properties. Cronbach's alpha was used to determine internal consistency at $\alpha = .94$. Test-retest reliability for the EAT-26 was not reported; however, it has been recorded for the children's version as r=.81 (Garner, et al.,

1982). The EAT-26 has shown significant construct validity when associated with other eating disorder measures. Moreover, the EAT-26 displays convergent validity when correlated with measures of depression and anxiety (Garner, et al.).

Facebook Profiles. The experimenter created a single fictional Facebook profile featuring a photo of a traditionally college-aged Caucasian woman supposedly from Tigard, Oregon, who currently attends the University of Oregon, and has approximately 103 Facebook friends. Her status updates included ambiguous weather and school details which elicited many positive comments and likes from her friends. Her "friends" were actually real friends of the experimenter who agreed to help by "friending" this fictional person. The experimenter only asked acquaintances who were not from the local area to friend the fictional person to minimize the chance that any participants would recognize another local person.

While both groups observed the same profile, the participants in one experimental group viewed a version of the profile featuring a photo of a thin, attractive Caucasian woman appearing to be of traditional college age (Appendix D). This group was referred to as the experimental-attractive group (EA). Participants in the second experimental group viewed the same profile featuring a photo of a heavier, less attractive, Caucasian woman appearing to be of traditional college age (Appendix E). This group was referred to as the experimental-unattractive group (EU). The two photos were purchased from iStockphoto.com by the experimenter. The women pictured in the photos gave consent prior to selling their pictures to the photo company. Upon purchase, the experimenter was given the license agreement and privacy rights to the photos.

Attentional Control Form (ACF). This measure was created by the researcher with the intentions of a) furthering a cover story designed to mask the true purpose of the study and b) attempting to ensure that all participants paid careful attention to the information on the website and viewed it for a full five minutes (Appendix F). For the experimental groups, it included questions, such as "Without knowing that this student goes to school in another state, please list at least three things that might suggest to someone that she lives in a different area of the US," "In her profile picture, what is the student's hair color," and "Based on the student's profile, how would you describe her musical interests?" The experimental participants were given these instructions regarding this measure: "This study is designed to measure college students' perceptions of other colleges and students attending colleges in other areas of the United States. Please spend the next five minutes looking at this Facebook page for this student from the University of Oregon and answering questions about her. Please continue doing this for a full five minutes; I will stop you when five minutes are up."

Procedure

No data were collected prior to IRB approval. All female students enrolled in spring 2014 Introductory Psychology courses who elected to participate in mass testing were given the BES, RSES, and EAT-26 during mass testing to determine baseline levels of each construct. Those participants who opted to attend the laboratory portion of the study participated in an individual laboratory session within a few weeks of mass testing under the cover story that they were participating in a study about college students' perceptions of students attending colleges in other geographic regions of the United States. The laboratory session lasted approximately 30 minutes.

Upon arrival at the laboratory, each participant was asked to read and sign an informed consent document. Participants were then randomly assigned to one of two conditions: the experimental condition in which a very thin and attractive woman's Facebook profile was viewed (EA) or the experimental condition in which a heavier and less attractive woman's Facebook profile was viewed (EU). Participants were then read the instructions regarding what to do, directed to the appropriate website, and given the ACF to complete for five minutes. This was done in a central room in the Health Psychology laboratory, with the researcher sitting at a nearby computer pretending to work in an attempt to ensure that the participant would feel compelled to stay on task and really pay attention to the profile. If the researcher found that a student was off task, the plan was for her to redirect the student back to the profile; however, this did not occur during the study. After viewing the profile and completing the ACF for five minutes, the students were told they could stop, with the researcher explaining (from a memorized script; Appendix G) that this study only aimed to focus on impressions formed within the first five minutes of viewing new material. The decision to run one participant at a time under the close supervision of the research assistant was based on the results of Smith and colleagues' (2013) study, where participants were given the option to complete the study on their own time. In this unstructured format, many left the target profile to view others' profiles.

At this point, the researcher recited a memorized script suggesting that her professor was doing a separate study and was desperately seeking female participants to complete measures for that line of research (Appendix G), and all participants were offered the chance to complete three additional measures (the BES, RSES, and EAT-26)

in order to help the researcher with her data collection for this "other study." Eighty-three participants agreed to do the additional measures; none of them declined. No participant appeared distraught by being asked to do so. After completing these additional measures or declining to do so, the researcher thanked all participants and provided a brief, vague debriefing designed to protect the integrity of the cover story (Appendix G).

CHAPTER IV

RESULTS

Again, the sample at the time of manuscript preparation consisted of 83 participants; however, one group had significantly more participants (50 versus 33), so 33 participants were randomly selected to make the group sizes identical. The final sample consisted of 66 Caucasian female undergraduate students with an average age of 18.98 years (SD=1.20; range=18-23). Only Caucasian females between the ages of 18-24 were allowed to participate in the study.

Three mixed-model ANOVAs were conducted to assess for differences between groups (experimental unattractive and experimental attractive) and time period (pretest and posttest) on Caucasian women's body image, self-esteem, and eating attitudes. Contrary to the hypotheses, none of the analyses revealed a significant interaction (all $p >$ .05).

One unexpected finding was a significant main effect for time on the EAT-26, $F(1, 64)=4.33$, $p=.04$. All of the participants' attitudes toward eating became significantly worse over time (pretest: $M=65.41$, $SD= 19.14$; posttest: $M=67.38$, $SD=18.80$). There was not a significant main effect for time on body image, $F(1,64)=2.46$, $p=.122$, or self-esteem, $F(1, 61)=.15$, $p=.70$, suggesting that participants' body image and self-esteem were not similarly impacted by the passage of time. There was also not a significant interaction or main effect for group for any of the variables (eating attitudes, $F(1,64)=1.91$, $p=.17$; body image, $F(1,64)=.569$, $p=.45$; or self-esteem,

$F(1, 61)=.103$, $p=.75$), suggesting that the participants were not differentially impacted by whether they viewed the attractive or the unattractive profile (Table 1).

Cronbach's alpha was used to measure the internal consistency of each measure to ensure adequate reliability for our sample. In the present study, all alpha coefficients showed strong inter-relationships among the items, (BES: Cronbach's alpha=.96; RSES: Cronbach's alpha=.94; EAT-26: Cronbach's alpha=.96); this is consistent with previous research that has used these measures.

Relationships between body image, self-esteem, and eating attitudes were examined using the Pearson correlation coefficient. As expected based on previous literature, these relationships were significant (body image/eating attitudes: r (66) = -.29, $p=.015$; self-esteem/eating attitudes: r (63) = -.40, $p=.001$), suggesting that as body image and self-esteem increase, disordered eating attitudes tend to decrease. Moreover, as seen in previous research, body image and self-esteem were also significantly correlated, (r (63) =.58, $p<.001$).

In terms of the Attention Control Form (ACF), the researcher carefully reviewed the participants' responses to ensure that they had paid close attention to the Facebook profile. All of the responses (100%) were accurate, indicating that the participants did pay close attention to the Facebook profiles. One participant did not complete the ACF during the study; this participant's data was not used. During the study, the research assistant watched the students' actions very carefully to see if they each appeared to be paying attention to the Facebook profile and did not move away from the target site; no participant was obviously not paying attention or moved away from the site.

CHAPTER V

DISCUSSION

The results of this study suggest that viewing the different Facebook profiles did not significantly differentially impact participants' body image, self-esteem, or eating attitudes. However, the researchers did find that eating attitudes worsened over time for all participants. Perhaps this effect could have been attributed to the time period of the study. The study was conducted during the spring semester prior to midterm exams. Previous research has found that as stress increases, especially during exam periods, students tend to eat poorly or more compulsively (Gower, Hand, & Crooks, 2008). Perhaps poor eating habits as a result of midterm exam stress could have elicited disordered eating attitudes and behaviors by the participants. Additionally, perhaps the impending spring break may have contributed to disordered eating thoughts and behaviors as the participants worried about weight loss prior to leaving for vacation or traveling home to see family and friends (Gower et al., 2008). It is also possible that significant individual events unrelated to the study, such as peer conflicts, interpersonal relationship issues, school-related anxiety, etc. may have warranted an increase in disordered eating attitudes and behaviors. Unfortunately, all of these potential explanations are beyond the scope of this study to test.

As previous research has suggested that users engage in social comparisons when surfing Facebook, an interaction between body image, self-esteem, disordered eating attitudes and behaviors and the level of attractiveness of the target profile was expected; however, no such association was found. However, in terms of self-esteem, individuals

who viewed the Facebook profile of the thin, attractive woman reported lower levels of self-esteem after viewing and those who viewed the profile of the heavier, less attractive woman reported higher levels of self-esteem after viewing. While these findings were not significant, it is interesting to note that they trended in the proposed direction. Perhaps with a larger sample size these findings would have been significant.

Beyond the small sample size, another possible explanation for the lack of significant findings is that the time period for which participants viewed the profiles (five minutes) may have been too short. While individuals tend to form perceptions of others within the first five minutes of meeting them in person (Bar, Neta, & Linz, 2006), the use of social networking sites may require more time to elicit a strong reaction from an unfamiliar person. As mentioned previously, Facebook users spend an average of 117 minutes surfing Facebook daily (Thompson & Lougheed, 2012), which is a significantly higher number that that utilized in the present study, suggesting that increasing the time spent examining the target Facebook profiles could be a possibility for future studies. It is also possible that more photographs on each profile would have elicited a stronger reaction, as typical Facebook profiles include multiple photos of the person featured.

Another possible explanation for the lack of anticipated findings may lie in the fact that the photographs used for this study were not pilot tested in terms of weight and attractiveness level. Future research should utilize photographs that have been pre-tested to meet the criteria of the target (in this case, attractiveness and weight).

A strength of this study is that research involving social networking sites, particularly Facebook, is relatively new and innovative. Also, this study is unique in that

it is the first to experimentally test whether the attractiveness level of the viewed Facebook profile would affect body image, self esteem, or eating attitudes. It is important to note that the viewed profiles were identical, except for the profile picture (i.e., the number and content of the positive comments and number of "likes" were the identical for both pictures), which controlled for potential confounding variables in the study.

It is interesting to note that two participants questioned the Facebook profiles used for this study. One participant asked whether the woman pictured in the Facebook profile was aware that her profile was being used for a study and another student repeatedly questioned whether the Facebook profile was "real." In both instances, the students' questions were answered with a simple "yes" and they were encouraged to continue on with the task at hand. While the other participants generally seemed to view the profiles without suspicion, we cannot know for sure whether they had similar concerns.

The primary reason to use Facebook is to form and maintain social capital (Steinfield, et al., 2008). In a society where social networking sites are becoming increasingly popular means of communicating with others, it is important to consider that maladaptive Facebook use may lead to interpersonal issues, such as ineffective communication with others (Kittinger, et al., 2012), as well as physical health and wellness issues (Campisi, et al., 2012). As future research is conducted, more information will be available regarding any potential negative implications associated with increased Facebook use.

REFERENCES

Back, M.D., Stopfer, J.M., Vazire, S., Gaddis, S., Schmuckle, S.C., Egloff, B., & Gosling, S.D (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science,* 1-3. doi: 10.1177/0956797609360756.

Bar, M., Neta, M., & Linz, H. (2006). Very first impressions. *Emotion, 6*(2), 269-278. doi: 1037/13528-3542.6..2.269

Beck, A.T., Steer, R.A., & Brown, G.K. (1996). Manual for the Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation.

Buffardi, L.E., & Campbell, W.K. (2010). Narcissism and social networking websites. *Personality and Social Psychology Bulletin, 34,* 1303-1314.

Cain, J. (2008). Online social networking issues within academia and pharmacy education. *American Journal of Pharmaceutical Education, 72*(1), 1-7.

Campisi, J., Bynog, P., McGehee, H., Oakland, J.C., Quirk, S, Taga, C., & Taylor, M. (2012). Facebook, stress, and incidence of upper respiratory infections in undergraduate college students. *Cyberpsychology, Behavior and Social Networking, 15*(12), 675-681. doi: 10.1089/cyber.2012.0156

Cecil, H., & Stanley, M. A. (1997). Reliablity and validity of adolescents' scores on the Body Esteem Scale. *Educational and Psychological Measurement, 57*(2), pp. 340-356.

doi: 10.1177/0013164497057002012.

Clerkin, E.M., Smith, A.R., & Hames, J.L. (2013). The interpersonal effects of Facebook reassurance seeking. *Journal of Affective Disorders,* http://dx.doi.org/10.1016/j.jad.2013.06.038

Coopersmith, S. (1981). Self-esteem inventories. Consulting Psychologists Press. Palo Alto.

D'Amato, G., Liccardi, G., Cecchi, L., Pellegrino, F., & D'Amato, M. (2010). Facebook: A new trigger for asthma? *The Lancet, 376*(9754), 1740. doi: 10.1016/S0140-6736(10)62135-6

DiMicco, J.M., & Millen, D.R. (2007). Identity management: Multiple presentations of self in Facebook. *GROUP'07,* 383-386. Sanibel Island, FL: ACM.

Duggan, M. & Brenner, J. (2012). The demographics of social media users. *Pew Research Center*. Retrieved June 6, 2013 from http://pewinternet.org/Reports/2013/Social-media-users.aspx.

Ellison, N.B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook friends: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*, 1143-1168. doi: 10.1111/j.1083-6101.2007.00367.x

Fairburn, C.G. & Beglin, S.J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *Interpersonal Journal of Eating Disorders, 16,* 363-373.

Forest, A.L. & Wood, J.V. (2012). When social networking is not working: Individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on

Facebook. *Psychological Science, 23*(3), 295-302. doi: 10.1177/0956797611429709

Franzoi, S.L. & Shields, S.A. (1984). The Body Esteem Scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment, 48,* 173-178.

Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *The Journal of Psychology, 136*(2), 581-596

Garner, D.M., Olmsted, M.P., Bohr, Y., & Garfinkel, P.E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine, 12,* 871-878.

Garner, D.M., Olmsted, M.P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory. *International Journal of Eating Disorders, 2*, 15-34.

Gonzales, A.L. & Hancock, J.T. (2011). Mirror, mirror on the Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking, 14*(1-2), 79-83. doi: 10.1089/cyber.2009.0411

Gower, B., Hand, C.E., & Crooks, Z.K. (2008). The relationship between stress and eating in college-aged students. *Undergraduate Research Journal for the Human Sciences,7*

Gross, R., & Acquisiti, A. (2005). Information revelation and privacy in online social networks. *Proceedings of WPES'05*, 71-80. Alexandria, VA: ACM.

Hargittai, E. (2008). Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication, 13*, 267-297.

Hodge, M.J. (2006). The Fourth Amendment and privacy issues on the "new" internet: Facebook.com and MySpace.com. *Southern Illinois University Law Journal, 31*, 95-122.

Hopwood, C.J., Clark, A.N., & Perez, M. (2007). Pathoplasticity of bulimic features and interpersonal problems. *International Journal of Eating Disorders, 40,* 652-658Huang, G.C., Unger, J.B., Soto, D., Fujimoto, K., Pentz, M.A., Jordan-Marsh, M., & Valente, T. (2013). Peer influences: The impact of online and offline friendship networks on adolescent smoking and alcohol use. *Journal of Adolescent Health*, 1-7.

Hull, G. & Lipford, H.R. (2011). Contextual gaps: Privacy issues on Facebook. *Ethics in Information Technology, 13*0, 289-302. doi: 10.1007/s10676-010-9224-8.

Jagatic, T., Johnson, N., Jakobson, M., & Menczer, F. (2007). Social phishing. *Communications of the ACM, 5*(10), 94-100.

Joiner, T., Alfano, M., & Metalsky, G. (1992). When depression breeds contempt: Reassurance seeking, self-esteem, and rejection of depressed college students by their roommates. *Journal of Abnormal Psychology, 101,* 165-173.

Jones, D.C. (2002). Social comparisons and body image: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles, 45*(9-10), 645-664.

Karl, K., Peluchette, J., & Schlaegel, C. (2010). Who's posting Facebook faux pas? A cross-cultural examination of personality differences. *International Journal of Selection and Assessment, 18*, 174-186.

Kittinger, R., Correia, C.J., & Irons, J.G. (2012). Relationships between Facebook use and problematic internet use among college students. *Cyberpsychology, Behavior, and Social Networking, 15*(6), 324-327. doi: 10.1089/cyber.2010.0410

Kornblum, J., & Marklein, M.B (2006). What you say online could haunt you. *USA Today*. Retrieved August 27, 2013 from http://usatoday30.usatoday.com/tech/news/internetprivacy/2006-03-08-facebook-myspace_x.htm

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues, 58*, 49-74.

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist, 53*(9), 1017-1031. doi: 10.1037/0003-066X.53.0.1017

Kross, E., Verduyn, P., Demiralp, E., Park, J., Seungjae Lee, D., Lin, N., Shablack, H., Jonides, J., & Ybarra, O. (2013). Facebook use predicts declines in subjective

well-being in young adults. *PLoS ONE 8*(8), e69841. doi: 10.1371/journal.pone.0069841

Lampe, C., Ellison, N., & Steinfield, C. (2004, November 9-11). *A face(book) in the crowd: Social searching vs. social browsing*. Paper presented at Psychological Conference, Vancouver, Canada.

Leitch, S., & Warren, M. (2009). Security issues challenging Facebook. Presented at the 7th Australian Information Security Management Conference

Lenhart, A. & Madden, M. (2007). Teens, privacy, and online social networks. *Pew Internet and American Life Project Report*. Retrieved August 27, 2013 from http://www.pewinternet.org/pdfs/PIP_Teens_Privacy_SNS_Report_Final.pdf

Nadkarni, A. & Hofmann, S.G. (2012). Why do people use Facebook? *Personality and Individual Differences, 52*(3), 243-249. doi: 10.1016/j.paid.2011.11.007

Raacke, J. & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking sites. *Cyberpsychology and Behavior, 11*(2), 169-174. doi: 10.1089/cpb.2007.0056

Raskin, R.N., & Hall, C.S. (1979). A narcissistic personality inventory. *Psychological Reports, 45,* 590.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & LoCicero, A. (2010). Psychometric properties of the Rosenberg Self-Esteem Scale: Overall and

across demographic groups living within the United States. *Evaluation & The Health Professions, 33*(56), pp. 56-80. doi: 10.1177/0163278709356187.

Smith, A.R., Hames, J.L., & Joiner Jr., T.E. (2013). Status update: Maladaptive Facebook usage predicts increases in body dissatisfaction and bulimic symptoms. *Journal of Affective Disorders,* 1-6.

Steinfield, C., Ellison, N., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology, 29*, 434-445. doi: 10.1016/j.appdev.2008.07.002

Thompson, S.H. & Lougheed, E. (2012). Frazzled by Facebook? An exploratory study of gender differences in social network communication among undergraduate men and women. *College Student Journal, 46*(1), 88-98.

Tiggemann, M. & Slater, A. (2013). NetGirls: The internet, Facebook, and body image concern in adolescent girls. *International Eating Disorders, 46,* 630-633.

Vissoci Reiche, E.M, Odebrecht Vargas Nunes, S., Kaminami Morimoto, H. (2004). Stress, depression, the immune system, and cancer. *The Lancet Oncology, 5*, 617-625.

Wellman, B., Haase, A.Q., Witte, J., & Hampton, K. (2001). Does the internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist, 45*(3), 436.

Wilson, K., Fornasier, S., & White, K.M. (2010). Psychological predictors of young adult's use of social networking sites. *Cyberpsychology, Behavior, and Social Networking, 13*, 173-177.

Wilson, R.E., Gosling, S.D., & Graham, L.T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science, 7*(3), 203-220. doi: 10.1177/1745691612442904

Wolniczak, I., Caceres-DelAguila, J.A., Palma-Ardiles, G., Arroyo, K.J., Solis-Visscher, R., Paredes-Yauri, S., Mego-Aquije, K., & Bernabe-Ortiz, A. (2013). Association between Facebook dependence and poor sleep quality: A study in a sample of undergraduate students in Peru. *PLOS ONE, 8*(3), e59087. doi: 10.1371/journaLpone.0059087.

APPENDIX A

BODY ESTEEM SCALE

Instructions: On this page 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:

1=Have strong negative feelings
2=Have moderate negative feelings
3=Have no feeling one way or the other
4=Have moderate positive feelings
5=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	_____
16.	buttocks	_____
17.	agility	_____
18.	breasts	_____
19.	appearance of eyes	_____
20.	cheeks/cheekbones	_____
21.	hips	_____
22.	legs	_____
23.	figure or physique	_____

24. sex drive _____
25. sex organs _____
26. appearance of stomach _____
27. health _____
28. sex activities _____
29. body hair _____
30. physical condition _____
31. face _____
32. weight _____

APPENDIX B

ROSENBERG SELF-ESTEEM SCALE

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.**

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

APPENDIX C

EATING ATTITUDES TEST-26

Instructions: Below is a list of statements dealing with your general attitudes about eating. Please complete the form below as accurately and honestly as possible using the following scale:

1=Never 2=Rarely 3=Sometimes 4=Often 5=Usually 6=Always

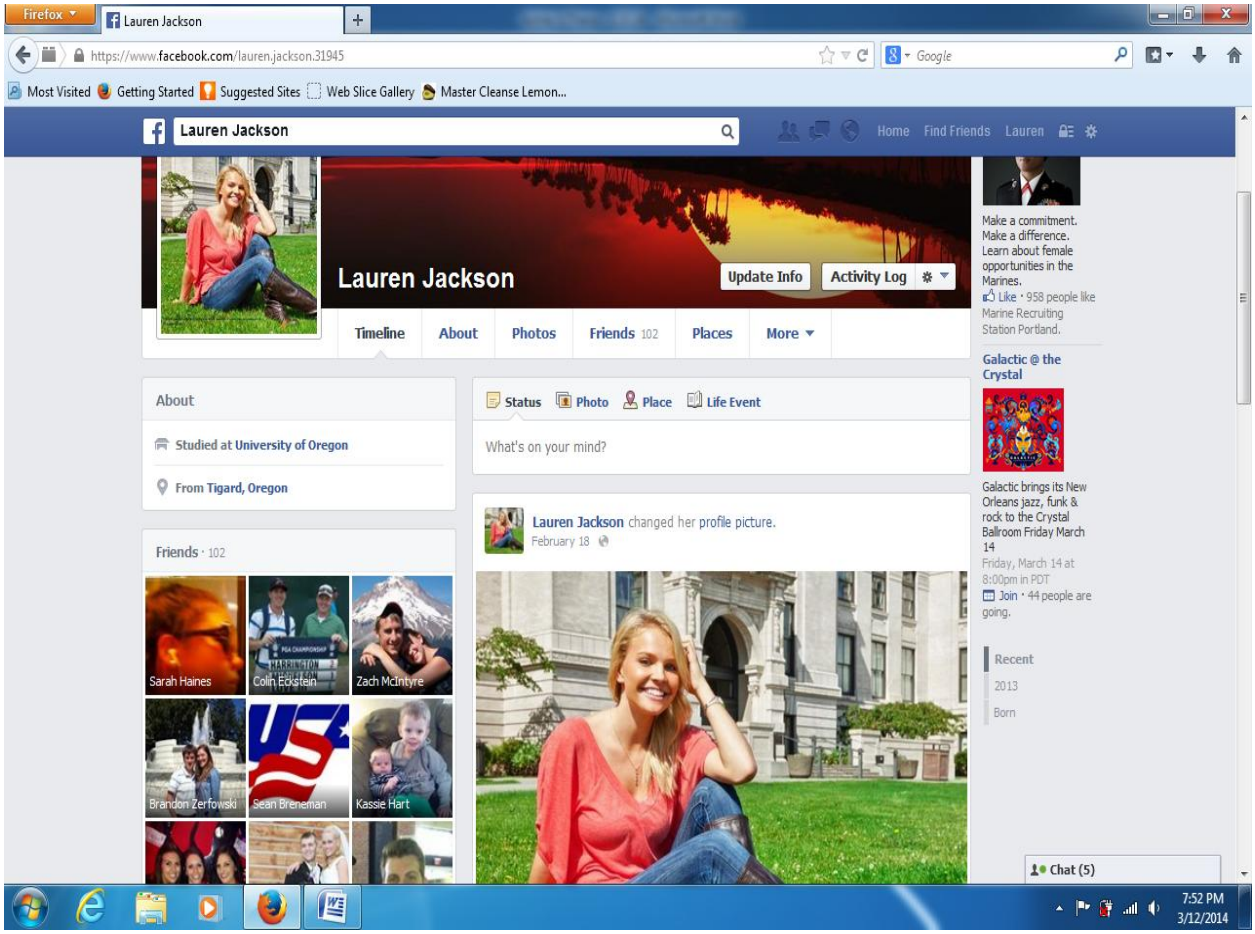
1. I am terrified about being overweight. _____
2. I avoid eating when I am hungry _____
3. I find myself preoccupied with food. _____
4. I have gone on eating binges and feel like I can't stop eating. _____
5. I cut my food into small pieces. _____
6. I am aware of the calorie content of foods that I eat. _____
7. I avoid food with high carbohydrate content (i.e. bread, rice, pasta,). _____
8. I feel that others would prefer if I ate more. _____
9. I vomit after I have eaten. _____
10. I feel extremely guilty after eating. _____
11. I am preoccupied with a desire to be thinner. _____
12. I think about burning calories when I exercise. _____
13. Other people think that I am too thin. _____
14. I am preoccupied with the thought of being fat. _____
15. I take longer than others to eat my meals. _____
16. I avoid foods with sugar in them. _____
17. I eat diet foods. _____
18. I feel that food controls my life. _____
19. I display self-control around food. _____
20. I feel that others pressure me to eat. _____
21. I give too much time and thought to food. _____
22. I feel uncomfortable after eating sweets. _____

23. I engage in dieting behavior. _____
24. I like my stomach to be empty. _____
25. I have the impulse to vomit after meals. _____
26. I enjoy trying rich new foods. _____

APPENDIX D

ATTRACTIVE FACEBOOK PROFILE

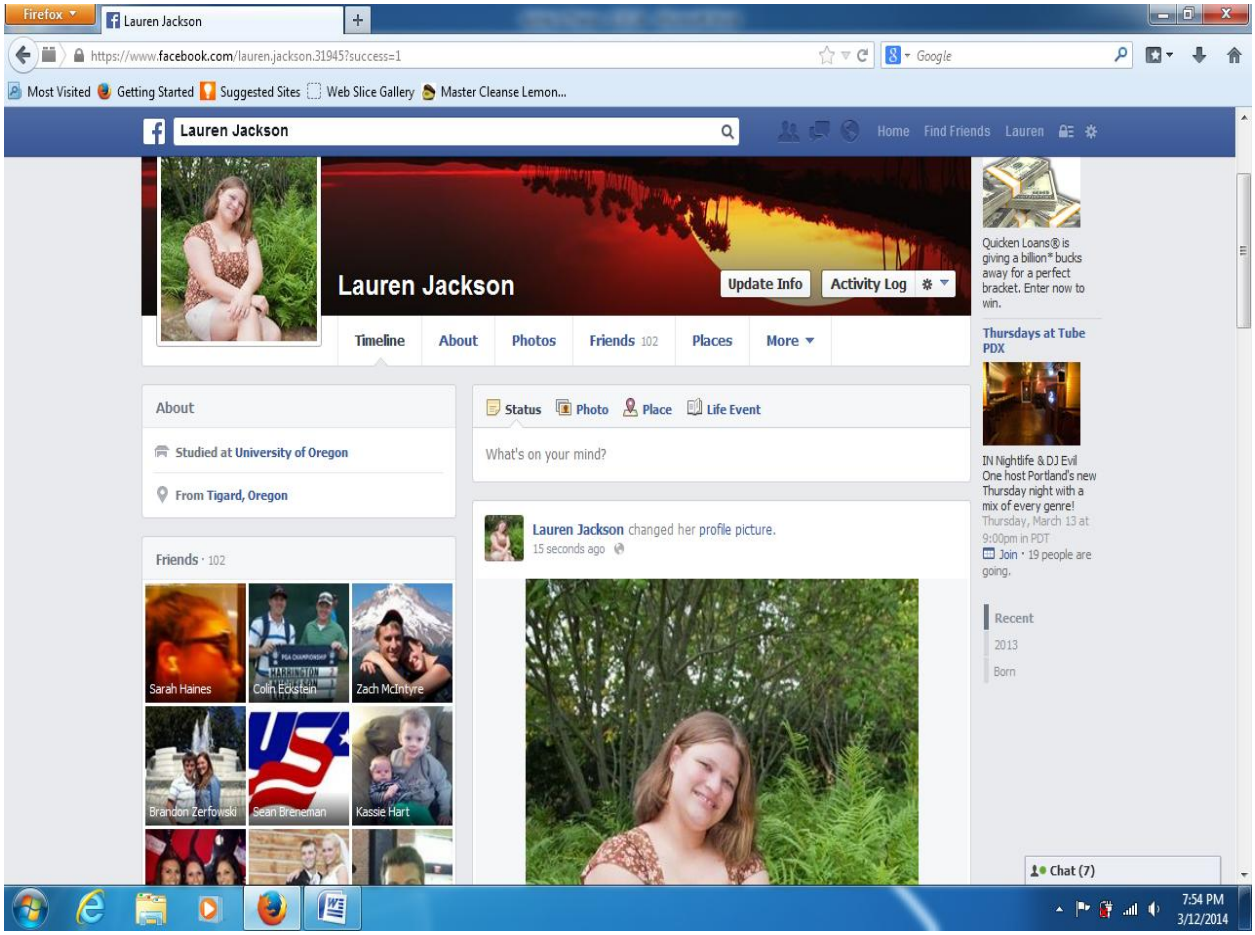
Screenshot



APPENDIX E

UNATTRACTIVE FACEBOOK PROFILE

Screenshot



APPENDIX F

ATTENTION CONTROL FORM

Instructions: Please complete this form while viewing the social networking profile. Please refrain from leaving the profile during the study. You are asked to do this task for five minutes; the researcher will alert you when five minutes are up.

1. Without knowing that this student goes to school in another state, please list at least three things that might suggest to someone that she lives in a different area of the US.
    1. _____
    2. _____
    3. _____

2. In the profile picture, what is the student's hair color?

    _____

3. Based on the student's profile, how would you describe her musical interests? Are they similar or different from your own?

    _____

    _____

    _____

4. Even though the student is from a different region in the US, how do you relate to her? Do you think you would like her if you met her? Why or why not?

    _____

    _____

_____

5. Based on the student's profile, what do you think her career interest may be?

_____

6. How many Facebook friends does this student currently have?

_____

7. Describe the student's attire and explain whether or not you think what she's wearing is similar to what students wear in the Midwest.

_____

_____

_____

8. What appeals to you about SIUE?

_____

_____

_____

9. Did you or have you ever considered attending a college/university in a completely different part of the country or even in another country? What appeals to you about staying or leaving the area?

_____

_____

_____

_____

10. In the student's profile picture, is she wearing glasses?

_____

11. Would you personally wear this student's outfit? Why or why not?

_____

_____

_____

APPENDIX G

DETAILED SCRIPT

"At this time, I would like you to stop looking at the profile. This study aims to focus only on impressions formed within first five minutes of being exposed to new content, so it's okay if you didn't have a chance to finish."

"At this point, since you've only been here for about 10 minutes, but are getting 30 minutes worth of credit, my professor wants me to ask you guys to complete three more brief forms for a different study she is doing in her lab. She is really desperate to find female participants—these additional forms will only take about 15 more minutes and all responses will be anonymous."

"Thank you for participating in these studies. The first study was aimed at perceptions of college students living in different regions of the United States and the second was something my professor is doing about body image and eating disorders. All responses to both studies are anonymous and confidential. If you find either of these studies was harmful to you in any way, please feel free to contact Counseling Services."

APPENDIX H

ACKNOWLEDGEMENT OF INFORMED CONSENT

Section I: **Identification of Project and Responsible Investigator:**

I hereby agree to participate in a research project entitled *Perceptions of College Students in other Geographical Regions of the United States* to be conducted by Ashley Hemrich, as principal investigator.

Section II**: Participant Rights and Information:**

1. Purpose of the Project:

It is my understanding that this study will look at perceptions of college students living in other parts of the United States. Your participation will partially complete your Introduction to Psychology research course requirements. If you choose to participate, you will be asked to view and answer questions about the Facebook profile of a college student living in a different part of the United States. After viewing the profiles, you will complete a few assessments. If you do not choose to participate, then you will be dismissed from the study without penalty.

2. Description of Risks:

There are no anticipated risks associated with this study. However, in the unlikely event that discomfort would occur, please alert the researcher immediately and she or her faculty mentor will assist you in finding resources that may help.

3. Description of Benefits:

The primary benefit to you is that you will earn participation credit toward your PSYC 111 course requirements. Beyond that, this research may provide insight into perceptions of college students.

4. Disclosure of Alternative Procedures:

There are no alternative procedures for this research except for non-participation.

5. Confidentiality of Records:

We will keep your confidential responses in a locked filing cabinet in the locked laboratory. Your responses will also be recorded on a computer file in the laboratory. These records will include your age, race, gender, and class rank. However, the records will NOT include your name, address, social security number, school ID number, or any other personal information. No one except the researchers and their faculty mentor will have access to this information.

6. Available Assistance:

In the extremely unlikely event that you have any strong, negative emotional reactions as a result of participating in this study, then we will: (a) take immediate steps to help you feel more at ease; (b) help you make contact with the SIUE Counseling Services Office to discuss the situation if you feel it is warranted.

7. Contact Information:

If you have any questions about our research project or about your rights and activities as a participant, then please contact the study's principal investigator, Ashley Hemrich. You can e-mail her at ahemric@siue.edu. You can also contact Dr. Laura Pawlow, faculty advisor, at lpawlow@siue.edu. If you are a participant and become worried about your emotional and physical responses to the project's activities, then we encourage you to immediately notify your instructor and Dr. Laura Pawlow, faculty advisor. They will work with you to seek assistance from SIUE Counseling Services (at 618-650-2842). If you have any questions about your rights or any other concerns, you may also contact Linda Skelton with the SIUE Institutional Review Board at (618) 650-2958 or lskelto@siue.edu.

8. Statement of Voluntary Participation:

If you choose to join the research project, your participation will be voluntary. You can ask to withdraw from the research project at any time without penalty. If you choose to withdraw from the study, any information that is collected will be appropriately discarded and will not draw special attention to you.

Section III: Signatures

1. Participant: _____ Date: _____

2. Principal Investigator: _____ Date: _____

3. Principal Investigator's Phone Number: __618-650-2608____

3. E-Mail: ahemric@siue.edu

APPENDIX I

MEANS AND STANDARD DEVIATIONS OF THE BES, RSES, AND EAT-26 BY GROUP AT PRETEST AND POSTTEST

Table 1

Means and Standard Deviations of the BES, RSES, and EAT-26 by Group at Pretest and Posttest.

Time Period	Assessment Instrument		
	BES	RSES	EAT-26
Pretest	EA: *M*=108.30 EA: *SD*= 18.67	EA: *M*= 30.94 EA: *SD*= 4.52	EA: *M*= 62.30 EA: *SD*= 17.17
	EU: *M*=105.91 EU*: SD*= 18.66	EU: *M*= 29.97 EU*: SD*= 5.62	EU: *M*= 68.52 EU*: SD*= 20.71
Posttest	EA: *M*=111.24 EA: *SD*= 18.35	EA: *M*= 30.48 EA: *SD*= 4.44	EA: *M*= 64.21 EA: *SD*= 18.41
	EU: *M*=107.09 EU*: SD*= 17.99	EU: *M*= 30.70 EU*: SD*= 4.99	EU: *M*= 70.55 EU*: SD*= 18.93

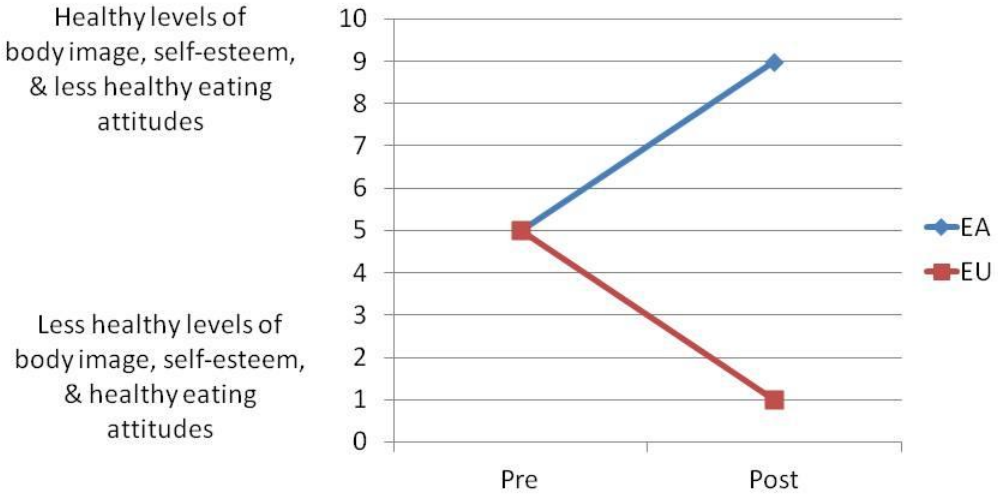
Note. N = 66 for BES and EAT-26; *N* = 63 for RSES.

Note. EA = Experimental Attractive; EU = Experimental Unattractive

APPENDIX J

PROPOSED FINDINGS

Figure 1. Proposed Findings

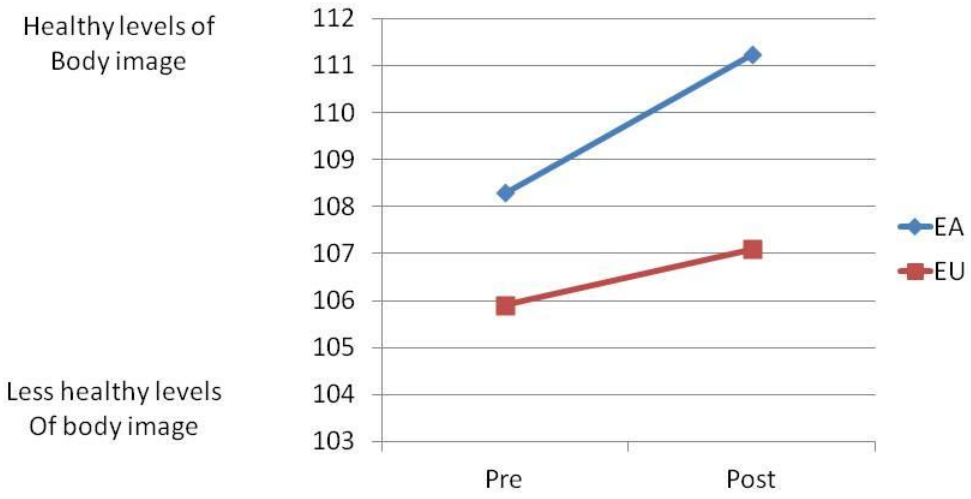


*Please note, the data and number values shown are completely fictitious and simply designed to provided a visual cue of how the groups will differ at the two time points on all measures. Please note that higher numbers indicate less health eating patterns on this scale.

APPENDIX K

ACTUAL FINDINGS—BES

Figure 2. Actual Findings—BES

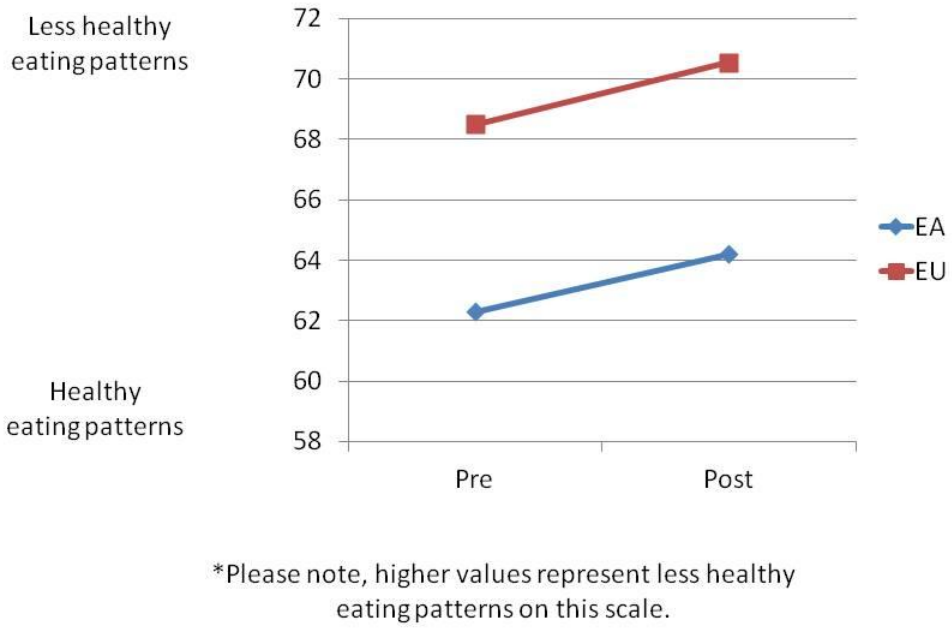


*Please note, there were no significant findings for this variable.

APPENDIX L

ACTUAL FINDINGS—EAT 26

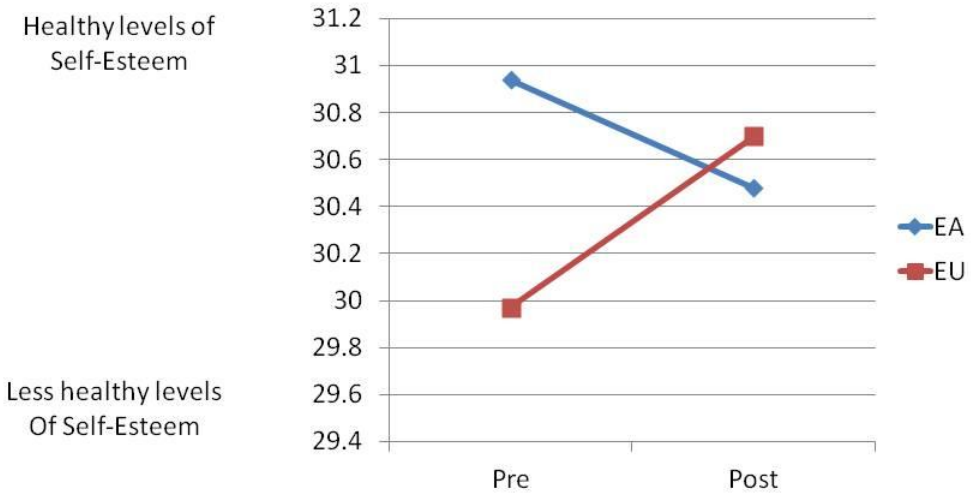
Figure 3. Actual Findings—EAT 26



APPENDIX M

ACTUAL FINDINGS—RSES

Figure 4. Actual Findings—RSES



*Please note, the results on this variable trended in the anticipated directions, but were not significant.