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LOMA LINDA UNIVERSITY  
School of Behavioral Health  
in conjunction with the  
Faculty of Graduate Studies

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An Examination of Social Media and the Tripartite  
Influence Model of Body Image Disturbance

by

Amanda F. Suplee

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A Dissertation submitted in partial satisfaction of  
the requirements for the degree  
Doctor of Philosophy in Clinical Psychology

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September 2016

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Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.

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## ABBREVIATIONS

BMI	Body Mass Index
EDI-3-BD	Eating Disorder Inventory III – Body Dissatisfaction Subscale
SATAQ-4	Sociocultural Attitudes Towards Appearance Questionnaire - 4
EDE-Q	Eating Disorder Examination-Questionnaire
PACS-R	Physical Appearance Comparison Scale- Revised
CBT	Cognitive Behavioral Therapy

## **ABSTRACT OF THE DISSERTATION**

An Examination of Social Media and the Tripartite  
Influence Model of Body Image Disturbance

by

Amanda F. Suplee

Doctor of Philosophy, Graduate Program in Clinical Psychology  
Loma Linda University, September 2016  
Dr. Sylvia Herbozo, Chairperson

The Tripartite Influence Model of body image disturbance demonstrates that parents, peers, and media play a role in the development of body image dissatisfaction and eating disorder psychopathology. Research suggests that parents, peers, and media play direct roles on the development of body dissatisfaction and eating disorder psychopathology in females as well as indirect roles through mediated relationships with appearance comparisons and thin ideal internalization. A form of media gaining recent attention is social media. Although there is limited research on social media and body image, studies suggest that use of social media is related to body dissatisfaction and eating disorder psychopathology. The current study examined the relationship between social media use, body image dissatisfaction, and eating disorder psychopathology using the conceptual framework of the Tripartite Influence Model. Participants were 746 undergraduate females of ages 18-30 at three Southern California universities and one university in North Dakota. Results indicated that there was a small, positive relationship between social media use and body dissatisfaction. Appearance comparison negatively moderated the relationship between social media use and body dissatisfaction. There was no relationship found between social media use and eating disorder psychopathology.

These findings highlight the need to further examine the relationships found between social media use and body dissatisfaction. The impact of social media use on specific cognitive processes, such as appearance comparisons and maladaptive thoughts, can be targeted in future interventions to address body image and eating disorder psychopathology.

# **CHAPTER ONE**

## **INTRODUCTION**

### **Body Image**

Body image is commonly defined as the perception of one's physical appearance comprising cognitions, emotions, and behaviors (Cash & Henry, 1995). Body image disturbances and risk for eating disorders have increasingly become a concern for adolescent and adult females. Research has shown high levels of body dissatisfaction in females (Fiske, Fallon, Blissmer, & Redding, 2014; Lawler & Nixon, 2011), which has significantly increased in females since the early 1980s (Cash, Morrow, Hrabosky, & Perry, 2004; Garner, 1997). Given the demonstrated association between body dissatisfaction and increased risk for eating disorder psychopathology (Kim & Lennon, 2007; Stice, 2002; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), it is necessary to continue research of factors involved in the development of body dissatisfaction and it is important to better understand how these factors relate to the development of eating disorder psychopathology to improve clinical treatment and outcomes.

Thompson et al. (1999) argue that attempts to meet the unrealistic ideals of beauty contribute to poor body image and eating disorders. The prevalence of appearance dissatisfaction has inspired the term "normative discontent" (Rodin, Silberstein, & Striegel-Moore, 1984). Normative discontent describes the increasing dissatisfaction with one's appearance as a result of social and cultural norms, sex roles, and stereotypes (Rodin et al., 1984). Body image research has identified body dissatisfaction and thin ideal internalization, which is accepting societal standards regarding a thin body as the ideal body shape, as key factors of body image disturbances.

### ***Body Dissatisfaction***

Body dissatisfaction refers to unhappiness with one's body or one's appearance (Thompson et al., 1999). A recent review noted that prevalence of body dissatisfaction for females ranges from 11-72% across studies (Fiske et al., 2014). Lawler and Nixon (2011) found that 80.8% of adolescent females experienced body dissatisfaction and desired a smaller body size than their current body size. Adolescents who prioritize their appearance were found to have increased body dissatisfaction two years later (Hargreaves & Tiggemann, 2002). High levels of body dissatisfaction have also been documented in younger females. Clark and Tiggemann (2008) found that nearly half of school-aged girls reported feeling dissatisfied with their body. Furthermore, girls as young as 3-6 years old have expressed a desire to change something about their appearance and worry about being fat (Hayes & Tantleff-Dunn, 2010). Similar results have been found in various studies of children and adolescents (Anschutz, Kanfers, Van Strien, Vermulst, & Engels, 2009; Clark & Tiggemann, 2007; Taylor, Wilson, Slater, & Mohr, 2012).

Factors such as body mass index (BMI) have been shown to contribute to increased body dissatisfaction. The body dissatisfaction reported by many females is typically with regard to weight and preoccupation with appearance (Cash & Henry, 1995; Mercurio & Rima, 2011; Mond & Hay, 2011), and such dissatisfaction is associated with lower self-esteem (Furnham, Badmin, & Sneade, 2002; Mäkinen, Puukko-Viertomies, Lindberg, Siimes, & Aalberg, 2012; Webster & Tiggemann, 2003). Higher BMI values are associated with greater body dissatisfaction (Stice & Whitenton 2002). Overweight and obese children report higher body dissatisfaction compared to healthy weight

children (Clark & Tiggemann, 2008; Lawler & Nixon, 2001; Vander Wal & Thelen, 2000; Young-Hyman et al., 2006).

Cognitive factors such as appearance schemas can also influence body dissatisfaction. Appearance schemas are a cognitive process of body image that focus on appearance and the belief that appearance is important to one's self-worth (Cash et al., 2004). This has been described as an investment in one's appearance, not merely an evaluation of the satisfaction with one's appearance. Studies have shown that girls with high levels of appearance schemas also report increased body dissatisfaction (Hargreaves & Tiggemann, 2002; Sinton & Birch, 2006). Additionally, women who have increased body dissatisfaction and eating disorder psychopathology are also more likely to utilize appearance schemas than other women (Hrabosky et al., 2009). Females who place significant importance on their appearance seem to have more body dissatisfaction, which is likely due to their attempts to meet societal standards of physical attractiveness.

### ***Thin Ideal Internalization***

The thin ideal refers to the beauty standards as defined by Western society, which currently promotes being thin. Messages regarding such thin ideals are often transmitted through media sources, such as television, movies, and magazines. Thin ideal internalization occurs when someone has accepted being thin as the beauty ideal and engages in behaviors to achieve that ideal (Thompson & Stice, 2001). Initial research has provided strong evidence for the notion that thin ideal internalization plays a possible causal role in the development of body image and eating disturbances (Thomson & Stice, 2001). Thin ideal internalization influences how women view their own appearance

within societal standards. As such, women who feel that they do not meet the societal standards of beauty are more likely to be dissatisfied with their body (Thompson et al., 1999).

Research suggests that internalization of the thin ideal occurs even at young ages. Sands and Wardle (2003) found that the level to which young girls believe they should adhere to society's pressure to be thin is related to their level of awareness of the thin ideal. More specifically, awareness of the sociocultural ideal of being thin is an essential key in understanding the development of internalization and body dissatisfaction (Cafri, Yamamiya, Brannick, & Thompson, 2005; Cusumano & Thompson, 1997; Heinberg, Thompson, & Stormer, 1995; Sands & Wardle, 2003).

Most females become aware of the thin ideal through messages from sociocultural influences. Of the possible sources, media seems to play a large role in promoting messages of societal standards of attractiveness, specifically in reinforcing the thin ideal. Women are presented with numerous images of unrealistic thin models. For instance, Malkin, Wornian, and Chrisler (1999) found as many as 94% of female magazine covers include a picture of a thin model or celebrity. Research has shown that increased exposure to thin images in the media is associated with higher body dissatisfaction (Tiggemann & McGill, 2004; Want, Vickers, & Amos, 2008). Furthermore, women who internalize the thin ideal experience more weight-related anxiety when exposed to images of thin models (Brown & Dittmar, 2005; Groesz, Levine, & Murnen, 2002).

### *Social Comparisons*

Social comparison theory argues that people evaluate themselves and their



limitations by directly comparing themselves to other people or physical objects (Wood, 1989). There are two forms of comparisons that can be made when making evaluations: downward and upward comparisons. Downward comparisons occur when a comparison is made with a person or an object that is viewed as having less worth and thus increases feelings of self-worth and well-being (Wills, 1981). Upward comparisons occur when a comparison is made with a person or an object believed to have greater value and thus possibly results in feeling down, jealous, or depressed (Wheeler & Miyake, 1992). A woman who compares herself with an image that promotes a thin body or ideal appearance and experiences increased dissatisfaction with her own appearance is making an upward comparison (Want et al., 2008).

A meta-analytic review by Myers and Crowther (2009) indicated that social comparisons based on appearances are positively related to higher levels of body dissatisfaction. Additionally, it is possible that internalization of the thin ideal occurs through body comparisons, and not merely exposure and conversations about appearance. Durkin, Paxton, and Sorbello (2007) found that females who internalized the thin ideal were more likely to compare themselves to thin images. Additionally, higher levels of appearance comparisons were associated with increased body dissatisfaction. Research has also shown that females who value appearance and compare themselves accordingly are more likely to have body dissatisfaction and are more likely to engage in unhealthy eating behaviors (Ahern, Bennett, & Hetherington, 2008; Boone, Soenens, & Braet, 2011; Thompson & Stice, 2001; Tiggemann & Miller, 2010).

The media appears to play a large role in the process of appearance comparisons by providing images of thin, idealized body shapes. Research has shown that exposure to

magazines and television shows that portray thin images is related to body dissatisfaction. A meta-analytic review of 25 studies on exposing images through television commercials and magazines found that women were more body dissatisfied after viewing images of thin models when compared to women viewing images of average sized models or objects such as cars (Groesz et al., 2001). With regard to magazine images, appearance comparisons with images of thin models decreased mood and increased body dissatisfaction among young women (Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010). Given the availability of media sources, it is likely women will be exposed to idealized images over a longer period of time, which increases the risk of greater body dissatisfaction and negative mood outcomes.

Research shows appearance comparisons are also made during exposure to appearance-based television shows. These types of shows include extreme makeover and cosmetic surgery shows. Mazzeo, Trace, Mitchell, and Grow (2007) found that participants exposed to appearance-based shows (i.e., extreme physical makeover type) were more likely to feel greater pressure to be thin than those exposed to a home makeover show. The findings indicated that among those exposed to the appearance-based show, those who internalized the ideal to be thin were more likely to report lower self-esteem after watching this show (Mazzeo et al., 2007).

Furthermore, Want et al. (2008) argued that research had demonstrated a relationship between exposure to thin images in television commercials and appearance-based television shows, but no research had been done on shows that did not focus on appearance. This study used a short clip of a situational comedy (i.e., *Friends*) and measured social appearance comparisons made when watching this show. Want et al.

(2008) found that even when women are watching a television show for entertainment, social comparisons are still made with regard to appearance. Results indicated that women made social comparisons with the female characters on this show, which led to increased body dissatisfaction after it was presented (Want et al., 2008). A meta-analysis by Groesz, Levine, and Murnen (2001) found that women with a history of eating disorder psychopathology and older adolescent females were the most susceptible to the effects of thin images in the media. Groesz et al. (2001) suggested that the relationship between presenting idealized images in the media and body dissatisfaction is related to an increase risk for eating disorder psychopathology.

### **Disordered Eating and Unhealthy Body Change Strategies**

Eating disorders are described as when a person engages in maladaptive eating behaviors accompanied by negative thoughts about their physical appearance. Among females, the prevalence rate for anorexia nervosa is 0.8%, 1.0-2.6% for bulimia nervosa, and 2.6-3.0% for binge eating disorder (Kessler et al., 2013; Stice, Marti, & Rohde, 2013). Body dissatisfaction has received significant research support as playing a key role in the onset of eating disorders (Kim & Lennon, 2007; Stice, 2002; Thompson et al., 1999). Research has shown that women with body dissatisfaction and lower self-esteem are more likely to engage in disordered eating behaviors, such as excessive dieting and purging, which can contribute to further pathology and severe health problems (Kim & Lennon, 2007; Algars, Santtila & Sandnabba, 2010; Barker & Galambos, 2006). Eating disorders have the highest levels of morbidity among all mental disorders (Pomeroy, 2004). Given the negative physical and psychological consequences of eating disorders, it

is necessary to gain a better understanding of factors contributing to the onset and maintenance of eating disorders.

### **Sociocultural Theory**

Thompson et al. (1999) argued that societal standards of attractiveness emphasize a thin ideal body shape that is not attainable by most women, which may result in body dissatisfaction. Additionally, research has indicated that thin ideal internalization and pressure to be thin is associated with higher risk for eating disorder psychopathology for adolescents (Stice, Mazotti, Krebs, & Martin, 1998), and acceptance of the thin ideal appears to continue into adulthood (Garner, 1997). As the negative association between thin ideal internalization and body image became more apparent, it was clear that more research and validated measures were needed to address these concerns.

To further examine the thin ideal, the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995) was developed. This 14-item measure consists of two subscales, awareness and internalization, and has demonstrated adequate internal consistency for both subscales and with other measures of body dissatisfaction and eating disorder psychopathology. Cusumano and Thompson (1997) revised the SATAQ to address the changes in the ideal images presented in the media, including more athletic body types. In the SATAQ-R, four items focusing on awareness of sociocultural ideals were added to the awareness subscale and three items focusing on how respondents interpret their appearance based on these ideals were added to internalization subscale. The subsequent revised version of the SATAQ-R is a 21-item measure with two subscales, awareness and internalization that

has demonstrated adequate internal consistency for both subscales. Cusumano and Thompson (1997) found that internalizing societal standards of attractiveness emphasizing thin body ideals for females was more indicative of body image disturbance than merely being aware that these values exist.

Thompson, van den Berg, Roehrig, Guarda, and Heinberg (2004) reevaluated the SATAQ-R in light of new societal ideals that promoted athletic bodies as well as thin body shapes. Additionally, the authors had concerns about the concept of internalization as assessed by the SATAQ-R in comparison to a widely used measure of internalization called the Ideal Body Internalization Scale-Revised (IBIS-R; Stice et al., 1998). The IBIS-R assesses internalization of the sociocultural ideal female figure. It appeared that the items in the IBIS-R were similar to the items in the awareness subscale of the SATAQ-R, not the internalization scale. Therefore, factor analysis was conducted to determine the factor loadings of items from the SATAQ-3 and IBIS-R items. It was noted that no items from the IBIS-R load on the internalization factor of the SATAQ-3 and appeared to create a different factor. Therefore, these results of this study suggested that the IBIS-R and internalization subscale of the SATAQ-3 are distinct measures.

Furthermore, the factor analysis of the SATAQ-3 identified four factors: internalization-general, information, pressures, and internalization-athlete (Thompson et al., 2004). The SATAQ-3 measured the societal ideals to include athletes given the changes in accepting athletic bodies as well as to include additional sociocultural factors such as pressures experienced by others. The SATAQ-3 subscales were shown to have good internal consistency (.92 - .96) during the first development study using

undergraduate females and good internal consistency (.89 -.94) when retested using a combined undergraduate and eating-disturbed sample (Thompson et al., 2004).

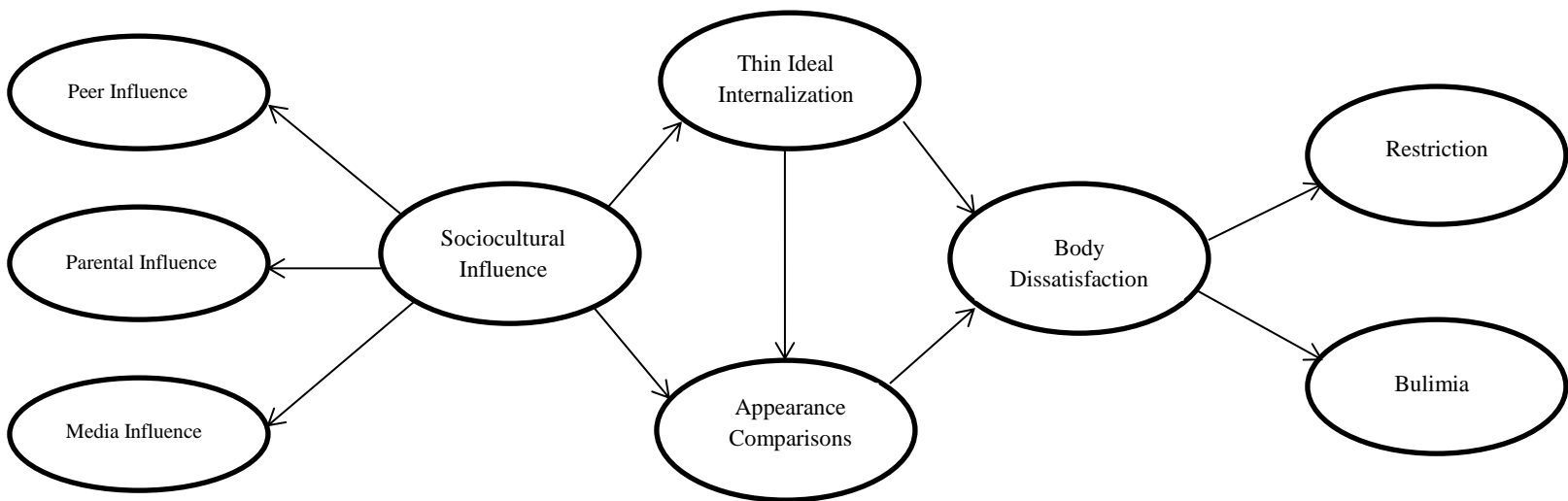
Additional limitations were identified with the SATAQ-3, which led to another revision of this scale. Given the growing research support for family and peers as primary sources of sociocultural pressures, the SATAQ-3 items were revised to capture such sources rather than solely focus on media sources (Schaefer et al., 2015). Additionally, it was recognized that items from the SATAQ-3 were more specific to females with the use of words such as “pretty,” which does not fully capture the pressures that men may experience. Such limited wording led to the modification of the items on the internalization subscales and generation of new items to assess sociocultural pressures to reflect both the muscular and the thin ideals (Schaefer et al., 2015).

For the development of the SATAQ-4, items were generated by researchers with expertise in this area based on limitations of the previous version and in light of recent research. As such, 51 items were initially examined by asking participants to rate agreement with each item on a five point Likert scale ranging from *definitely disagree* to *definitely agree*. A subsequent confirmatory factor analysis for the SATAQ-4 identified 22 items on five factors which represented the following subscales: Internalization: Thin/Low Body Fat, Internalization: Muscular/Athletic, Pressures: Peers, Pressures: Family, Pressures: Media (Schaefer et al., 2015). The SATAQ-4 subscales showed good internal consistency (.82 or higher) among U.S. females and women from other countries such as Italy and Australia (.84 or higher). The subscales of the SATAQ-4 also showed adequate internal consistency (.75 or higher) for males. Additionally, the SATAQ-4 had

good convergent validity with other measures of eating disorder psychopathology, body dissatisfaction, and self-esteem (Schaefer et al., 2015)

### **Tripartite Influence Model**

The Tripartite Influence Model of body image disturbance (See Figure 1; Thompson et al., 1999) was developed to provide a framework for understanding the manner in which sociocultural influences play an important part in the onset of body dissatisfaction and eating disorder psychopathology. This model proposes that pressure about appearance from peers, parents, and the media may negatively influence body dissatisfaction and eating disorder psychopathology. More specifically, it is argued that parents and peers may make comments about weight, body shape, clothing, or eating patterns that may increase negative body image. Additionally, increased exposure to media sources such as television and magazines can also increase exposure to negative comments about idealized body type and appearance that are likely to increase body dissatisfaction and eating disorder psychopathology. Moreover, the relationships among sociocultural influences, body dissatisfaction and eating disorder psychopathology are changed when internalization of the thin ideal and appearance comparisons are included. It is proposed that internalizing the thin ideal and making comparisons based on appearances will change how a person interprets the pressures felt from parents, peers, and media, which will affect body dissatisfaction and eating disorder psychopathology (Thompson et al., 1999).



**Figure 1.** Tripartite Influence Model of Body Image Disturbance  
(Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Keery, van den Berg, & Thompson, 2004).



Research studies have shown support for the Tripartite Influence Model of body image disturbance as a useful framework. Using structural equation modeling to test the original Tripartite Influence Model as well as several modifications, Keery, van den Berg, and Thompson (2004) found that the Tripartite Influence Model is a good representation of the mechanisms by which sociocultural influences may contribute to body dissatisfaction and eating disorder psychopathology in adolescent females. More specifically, Keery et al. (2004) created a sociocultural composite variable to include the pressures felt from parents, peers, and media sources together rather than separately, although the results indicated that each variable was significantly related to body dissatisfaction and eating disorder features. Results of this study indicated the comments, teasing, and pressures regarding appearance received from peers, parents, and the media are directly related to dissatisfaction and disordered eating features, specifically restriction and bulimia. It was also found that influences from sociocultural factors are indirectly related to body dissatisfaction and eating disorder psychopathology through mediational processes of appearance comparison and internalization of the thin ideal.

Menzel et al. (2011) found additional support for the Tripartite Influence Model as a representation of the sociocultural factors involved in body dissatisfaction. This study used the Tripartite Influence Model as a framework to predict attitudes towards cosmetic surgery in place of eating disorder psychopathology. Menzel and colleagues (2011) used structural equation modeling to find that pressures from peers, parents, and media to have cosmetic surgery were negatively related to body satisfaction. Additionally, pressures about having cosmetic surgery were also related to internalization of the societal ideal body. Finally, pressures from sociocultural influences to have

cosmetic surgery were related to more positive attitudes towards cosmetic surgery. Therefore, Menzel et al. (2011) argue that the results were a good fit of the Tripartite Influence Model in predicting attitudes towards cosmetic surgery. This study highlights the usefulness of the model in predicting other appearance-related behaviors beyond body dissatisfaction and eating disorder psychopathology.

Previous research indicates that certain sociocultural influences may be more important to the development of body dissatisfaction and eating disorder psychopathology than other influences. In contrast to the previous work of Keery et al. (2004), Shroff and Thompson (2006) used the sociocultural influences individually in the model rather than create a composite factor. The results of this study indicate that peer and media influences may be more significant to both indirect influences (through internalization of thin ideal and appearance comparison) and direct influences on body dissatisfaction and eating disorder psychopathology. However, it is important to note that there were no differences in the model fit, suggesting that parents might still play an important role indirectly and thus warrant continued attention.

### *Parents*

Parents appear to play a large role in the development and maintenance of body dissatisfaction and eating disorder psychopathology. Previous research indicates that direct appearance-related behaviors evidenced by a child's parent are likely to influence drive for thinness and body dissatisfaction (Canals, Sancho, & Arija, 2009; Haines, Neumark-Sztainer, Hannan, & Robinson-O'Brien, 2008; Wertheim, Martin, Prior, Sanson & Smart, 2002). It is important to note that research has been inconsistent in the

outcomes for children based on which parent is being examined. For example, Wertheim et al. (2002) found that mother dieting behaviors were related to drive for thinness in both boys and girls, but father dieting behaviors were not related. On the other hand, Canals et al. (2009) found that both mothers' and fathers' behaviors were related to long-term risks for eating disorder psychopathology in children. A mother's body dissatisfaction, drive for thinness, and feelings of being ineffective as well as a father's drive for thinness and perfectionism were also found to be related to higher risk of eating disorders.

Parents, and specifically mothers, appear to play a role in encouraging their children to engage in behaviors that are in line with achieving the societal ideal. For example, McCabe and Ricciardelli (2001) found that girls perceived that their mothers were encouraging behaviors, such as dieting, that would make their bodies more in line with the societal ideal; however, fathers were not perceived to be providing these same messages. Wertheim et al. (2002) found that encouragement to diet from the parent was related to drive for thinness and body dissatisfaction for girls. The messages that parents provide to their children play an important role in the development of body image disturbance.

### *Peers*

While parents and peers both play a role in body dissatisfaction and eating disorder psychopathology, peers seem to play a larger role than parents. Salafia and Gondoli (2011) argue that girls spend more time with peers in adolescence and are therefore more likely to engage in talk about appearance and dieting with peers than parents. Peer influences have been related to the thin ideal internalization and social

comparisons which, in turn, are related to body dissatisfaction and eating disorder psychopathology (Salafia & Gondoli, 2011). These findings are in line with previous research, which found that girls more than boys perceive that peers are more likely to encourage behaviors that promote the societal ideal body (McCabe & Ricciardelli, 2001).

Additionally, messages from peers can include appearance-based teasing. Such teasing, especially weight-based teasing, has been found to be related to body dissatisfaction and eating disorder psychopathology (Sweetingham & Waller, 2008). A meta-analysis by Menzel et al. (2010) found that there is a significant positive relationship between teasing, both weight-related and appearance-related, and body dissatisfaction and eating disorder psychopathology, including dietary restraint and bulimic behaviors. Several methodological factors influencing this relationship were highlighted by Menzel et al. (2010). For example, the associations among body dissatisfaction, eating disorder psychopathology, and teasing were found to be larger for children and adolescents than adults. Additionally, the measures used to assess teasing ask about teasing history, which may be subject to recall bias. Teasing may be more salient for children and adolescents rather than adults and may provide insight into why the associations among body dissatisfaction, eating disorder psychopathology, and teasing are larger for children. Finally, teasing may be experienced more by females than males, and thus the relationship between body dissatisfaction and teasing may be different by gender (Menzel et al., 2010). Overall, research to date provides strong evidence indicating teasing is associated with body dissatisfaction and eating disorder psychopathology.

## *Media*

The media is recognized as one of the main sources of messages regarding societal standards of physical attractiveness. Research has demonstrated the manner in which media may lead to excessive concerns about food intake, weight, and physical appearance among normal weight, non-eating disordered adolescents and women (Thompson et al., 1999). Garner (1997) examined the influence of the media in promoting the ideal of being thin. Garner (1997) reported that 23% of the women surveyed reported they were influenced by celebrities on television or movies and 22% were influenced by fashion magazines.

Research on the content of magazines and television programs has shown the potentially detrimental effects of such media. Magazines, in particular, have been shown to portray increasingly thinner models over the past 50 years (Sypeck, Gray, & Ahrens, 2003). Exposure to thin images has been associated with poor body image for women. Harper and Tiggemann (2007) found that women who viewed thin images experienced greater anxiety and self-objectification compared to women who viewed product-related images. Exposure to thin images is associated with higher levels of negative mood and lower self-esteem which are related to disordered eating (Hawkins, Richards, Granley, & Stein, 2004; Slevic & Tiggemann, 2011). Furthermore, studies of female adolescents show a link between the amount of exposure to ideal images on television and body dissatisfaction. Research suggests that increased viewing of women in stereotyped sex roles is associated with high levels of body dissatisfaction and negative self-image (Grabe & Hyde, 2009; Tiggemann & Pickering, 1996).

A recent meta-analysis provides additional support for the association between viewing media images and body dissatisfaction and eating disorder psychopathology (Hausenblas et al., 2013). Viewing images in line with societal ideals was shown to be related to increased depressive symptoms and decreased self-esteem. Hausenblas et al. (2013) argues that viewing these idealized images can be most harmful for those at higher risk for developing an eating disorder. Those at risk include overweight or obese individuals or individuals with high thin ideal internalization, low self-esteem, or eating disorder psychopathology (Hausenblas et al., 2013). Thus, media plays a role in the development of body dissatisfaction and eating disorders.

One aspect of media gaining attention recently is that of social media such as Facebook, Twitter, and Instagram. Tiggemann and Miller (2010) propose that appearance has become a topic of conversation on social media for females and it is likely that social media provides another forum for sending messages regarding appearance and aspects of body image. Recent research has shown that girls who spent more time on social networking sites, such as MySpace and Facebook, displayed higher levels of the drive for thinness, greater thin ideal internalization, and greater weight dissatisfaction (Tiggemann & Miller, 2010). The authors propose that social networking sites increase exposure to appearance-related conversations and commentary, which likely contribute to greater internalization of the ideal. Tiggemann and Slater (2013) reported similar findings suggesting that female adolescents who spent more time on Facebook had increased thin ideal internalization, drive for thinness, and body surveillance. Additionally, the authors argue that increased time on these sites might increase peer interaction and social

comparisons, which has been identified as a predictor of increased body dissatisfaction (Myers & Crowther, 2009; Tiggemann & Slater, 2013).

Facebook use has also been found to be related to eating disorder psychopathology. Smith, Hames, and Joiner (2013) examined maladaptive use of Facebook and eating disorder psychopathology such as body shape concerns, binge eating, and thoughts of purging behaviors in a sample of college women. Maladaptive use of Facebook was defined as engaging in negative social evaluations and comparisons. Given a lack of validated measures, this study created a measure to assess this construct. Items included “reading the status updates of others tends to make me feel down on myself” and “I sometimes write negative things about myself in my status updates to see if others will respond with negative comments about me” (Smith et al., 2013). Greater levels of maladaptive Facebook use were related to greater levels of bulimic symptoms and overeating episodes. The authors propose that disordered eating features may be due to negative social interactions and increased time on social media sites, such as Facebook, provides increased exposure to these interactions (Smith et al., 2013).

Rutledge, Gillmor, and Gillen (2013) found that those who spent less time on the site and were more invested emotionally into Facebook, were more likely to be more appearance-focused. The authors suggest that those who had more body image concerns were likely to spend less time on Facebook as a way to avoid portraying themselves unattractively and might limit time spent looking at other’s pictures to avoid social comparisons. Conversely, those who have more friends on the social media sites were more likely to have a positive view of their appearance. It was also found that users who have more friends increase their exposure to positive evaluations and feedback of their

appearance through the friends expressing positive feedback using a Facebook feature (Rutledge et al., 2013). Specifically, a Facebook friend may indicate their acceptance of or interest in a person's pictures or postings by using the "like" feature, which provides positive feedback to the original user.

### **The Current Study**

Sociocultural factors, such as parents, peers, and media, have been well documented as having strong influences on body dissatisfaction and eating disorder psychopathology. More specifically, media, including magazines and television, has shown a significant, positive association with body dissatisfaction and eating disorder psychopathology. However, there is very little research on social media as it is a relatively new media platform. The limited research suggests that increased use of social media sites, including Facebook, is associated with increased body dissatisfaction and eating disorder psychopathology. The effects of social media on body image and eating disorder psychopathology warrant further attention given the likelihood of increased exposure to ideal images, appearance comparisons, and appearance-related feedback. The current study was designed to examine the relationships among social media use, body dissatisfaction, thin ideal internalization, appearance comparisons, and eating disorder psychopathology. In addition, this study examined potential sociocultural pressures felt from social media use with regard to physical appearance and the effect of such pressures on body image.

The Tripartite Influence Model has been well documented as a representation of sociocultural pressures on body dissatisfaction and eating disorder psychopathology.



However, little research has examined other areas of body image within this model and no research has examined social media use using this model as a framework. Therefore, the current study will also examine social media use within the conceptual framework of the Tripartite Influence Model to better understand the relationship of social media use, body dissatisfaction, and eating disorder psychopathology. The Tripartite Influence Model demonstrates that thin ideal internalization and appearance comparisons mediate the relationships between sociocultural factors, body dissatisfaction, and eating disorder psychopathology. However, there is limited research to support a mediation analysis using social media in the current study. Previous research suggests that women who internalize the thin ideal and make appearance comparisons experience body dissatisfaction and are at higher risk for eating disorder psychopathology when exposed to thin images in the media (Groesz, Levine, & Murnen, 2002; Hausenblas et al., 2013). Therefore, the current study will deviate from the model by using moderation analyses to examine the relationship of social media use, body dissatisfaction, and eating disorder psychopathology.

### **Aims**

The proposed study includes three aims with four hypotheses.

**Aim 1:** To examine the relationship between social media use and body image disturbance and eating disorder psychopathology.

**Hypothesis 1:** Higher levels of social media use, such as Facebook, Instagram, and Twitter, will be associated with higher levels of body dissatisfaction, thin ideal internalization, social comparisons, and eating disorder psychopathology.

**Aim 2:** To examine the relationship between social media use and sociocultural pressures.

**Hypothesis 2:** Higher levels of exposure to social media use will be associated with higher levels of pressure from peer and media influences.

**Aim 3:** To examine social media as one of the sociocultural influences within the framework of the Tripartite Influence Model.

**Hypothesis 3a:** Thin ideal internalization and social appearance comparisons will moderate the relationship between social media use and body dissatisfaction.

**Hypothesis 3b:** Thin ideal internalization and social appearance comparisons will moderate the relationship between social media use and eating disorder psychopathology.

## CHAPTER TWO

### METHODS

#### Participants

The participants were 746 female undergraduate students drawn from the subject pools at California Baptist University ( $n = 108$ ), California State University Dominguez Hills ( $n = 122$ ), and La Sierra University ( $n = 74$ ), and North Dakota State University ( $n = 442$ ). The sample consisted of females between the ages of 18 and 30 years of age ( $M = 19.11$ ,  $SD = 1.43$ ). The sample BMI ranged from 14.06 to 64.44 ( $M = 24.69$ ,  $SD = 5.93$ ) with 41 women in the underweight category (5.5%), 430 in the healthy weight category (57.6%), 157 in the overweight category (21.0%), and 105 in the obese category (14.1%). Four hundred sixty-three (62.1%) of the participants were Caucasian, 171 participants identified as Hispanic (22.9%), 40 identified as Asian American (5.4%), 38 identified as African American (5.1%), and 17 participants identified as other (2.3%). The G\*Power Analysis program (Faul, Erdfelder, Buchner, & Lang, 2009) was used to determine the sample size necessary to attain sufficient power (.80) at an alpha level of .05 and medium effect size of .3 for the statistical analyses. For correlational analyses, 84 participants was the minimum sample size required for these assumptions. For linear regression analyses, 23 participants was the minimum sample size needed to meet these requirements. Finally, for multiple regression analyses, 23 participants were needed to identify the required effect size with 3 predictor variables. Participant demographics are shown in Table 1.

## **Procedures**

Participants were recruited from the undergraduate subject pools at California Baptist University, California State University Dominguez Hills, La Sierra University, and North Dakota State University to participate in an online study of body image and sociocultural factors. This study was approved by the Institutional Review Board (IRB) at Loma Linda University and each of the universities where data was collected. The inclusion criteria for the current sample were being female, being between 18 and 30 years of age, having access to internet and a computer to complete the online survey, and able to read and understand the English language. Participants who were interested in completing the study and met the inclusion criteria were directed to an online survey in which they responded to a series of questionnaires. Participants were required to sign an electronic informed consent document before completing the online survey. All participants received credit for a psychology course as compensation for their participation.

## **Measures**

### ***Demographic Information***

Participants were asked to provide demographic information including age, height, weight, race/ethnicity, and year in school (See Appendix A).

### ***Body Mass Index (BMI)***

BMI is a measure of weight for height. Self-reported height in inches and weight in pounds were used to calculate the body mass index (BMI) of the participants. For the current study, the English formula was used to calculate BMI: ratio of weight (in pounds)

to squared height (in inches) multiplied by 703. BMI is often used as a variable in body image and eating disturbance research to account for the effects of body mass. Higher BMI values represent higher levels of body mass (Garrow & Webster, 1985).

### ***Social Media Use***

Participants were asked whether or not they have a social media site (i.e., Facebook, Twitter, Instagram; Appendix B), and frequency and duration of use. Items included “how long have you been using each website?” and “how long do you spend, on average, on these websites each day?” (i.e., *none, 30 minutes or less, about 1 hour, about 2 hours, about 3 hours, about 4 hours, about 5 hours, or 6 hours or more.*) The number of hours of social media use per day for Facebook, Instagram, and Twitter were combined to create one social media use variable for the analyses. Higher scores on this variable indicate more time spent on social media websites each day. These questions are based on previous research (Tiggemann & Slater, 2013) and modified for the current study.

### ***Body Image***

The Eating Disorder Inventory III – Body Dissatisfaction Subscale (EDI-3-BD; Garner, 2004; Appendix C) is a measure that examines one’s perception of different body parts. This 10 item measure uses a 6 point Likert scale ranging from *always* to *never*. Example items include “*I think that my stomach is too big*” and “*I think that my hips are too big.*” Higher scores indicate higher levels of body dissatisfaction. This scale has shown high internal consistency across several psychometric studies (Cronbach’s alpha =

.88 -.93; Clausen, Rosenvinge, Friberg, & Rokkedal, 2011; Garner, 2004; Lehmann et al., 2013). In the current study, this scale showed low internal consistency (Cronbach's alpha = .61). An item deletion analysis indicated that removing any of the items would not increase its internal consistency (Cronbach's alpha = .57 - .61).

### ***Sociocultural Factors***

The Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4; Schaefer et al., 2015; See Appendix D) is a 22-item measure that examines internalization of societal ideals as well as pressures from family, peers, and media using a 5-point Likert scale ranging from *definitely disagree* to *definitely agree*. Examples of items include “*I think a lot about looking thin,*” “*My peers encourage me to get thinner,*” and “*I feel pressure from the media to look in better shape.*” Higher scores indicate greater internalization of societal ideals and pressures from sociocultural influences. The three pressure subscales were combined to create one variable to measure the pressure felt from sociocultural factors for the analyses in this study. The SATAQ-4 has shown good reliability for all SATAQ-4 scales (Cronbach's alpha = .82 - .96). The scales showed good to excellent internal consistency in the current study (Cronbach's alpha = .86 - .97).

### ***Eating Disorder Psychopathology***

The Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994; Appendix E) is a 28-item measure that assesses for features of eating disorders and behaviors within the past 28 days. The measure includes four subscales: Restraint, Eating

Concerns, Weight Concerns, and Shape Concerns. Examples items include “*Have you had a definite fear of gaining weight?*” and “*How many times have you taken laxatives as a means of controlling your shape or weight?*” The EDE-Q has shown good internal reliability (Fairburn & Beglin, 1994). When coding the data from one university in the current study, it became apparent that the final option of “*every day*” was omitted as a choice for participants ( $n = 442$ ), as such the Likert rating for the items ranged from 0 (*no days*) to 5 (*23 - 27 days*). This did not affect internal consistency, which was adequate to excellent for all subscales of this measure in this portion of the data (Cronbach’s alpha = .83 - .92). No transformation of these data was done, as the Likert scale was similar to the original measure excluding the final option. Therefore, it was added to the rest of the data and analyses were run. Limitations of addressing this issue will be discussed below. When these data were added to the entire dataset, internal consistency remained adequate to excellent for all subscales of this measure as well (Cronbach’s alpha = .80 - .92).

### ***Appearance Comparisons***

The Physical Appearance Comparison Scale - Revised (PACS-R; See Appendix F) is an 11-item measure that examines comparing oneself to others based on different features of physical appearance using a 5-point Likert scale ranging from *never* to *always*. Example items include “*When I am out in public, I compare my physical appearance to the appearance of others*” and “*When I am with a group of friends, I compare my weight to the weight of others.*” Higher scores reflect greater tendencies to make physical appearance comparisons with others. The PACS-R has shown excellent internal reliability (.95) and good convergent validity with measures of body

dissatisfaction and eating disturbance (Schaefer & Thompson, 2014). This measure showed excellent internal consistency in this sample (Cronbach's alpha = .97).

### **Statistical Analysis**

Data analysis was conducted using SPSS 20. First, descriptive statistics were computed for all variables included in the study. Descriptive statistics of BMI indicated an error in the data with an original range of 5.02 to 64.44. BMI scores were transformed to z scores to test for outliers. Using the cut off of 3.29, there were no outliers detected in the data. Therefore, investigation of the raw data indicated that participants may have input height or weight incorrectly. Data could be inferred from reported height and weight and were corrected for 16 participants; data for 4 participants were deleted from the data set with insufficient information. Prior to analysis, we examined the data for outliers, missing data, multicollinearity, and violations of assumptions. Variables of interest were evaluated using regression diagnostics to determine the leverage, discrepancy, and influence of the data. No outliers were detected using these diagnostics. Up to 7% of the data were missing for each of the variables of interest. Listwise deletion was used to manage this during analyses, and excluded between 1 and 59 cases in each analysis. In order to check for multicollinearity, the Variance Inflation Factor (VIF) values were calculated. Using the VIF cut-off value of 10, multicollinearity was not a problem for the variables of interest.

The first and second aims of this study are to examine the relationships among social media use and body dissatisfaction, thin ideal internalization, eating disorder psychopathology, appearance comparisons, and sociocultural pressures. Means and



standard deviations were calculated for each variable. Correlational analyses were conducted to determine if the relationships were positive as expected. The third aim of this study is to examine social media use within the conceptual framework of the Tripartite Influence Model of body image disturbance. Simple and multiple linear regressions were conducted to determine if the relationships were as predicted. To test the assumptions of the regression analyses, scatterplots were created for the dependent variables against each independent variable to determine that the relationship between the independent variables and dependent variables were correctly specified. The assumption that independent variables should be correctly specified was met by using variables chosen through theory and previous research. The assumption that variables were measured without error was evaluated using Cronbach's alpha to test for reliability. The Cronbach's alpha coefficients indicated that all but the Eating Disorder Inventory- Body Dissatisfaction subscale was reliable. An item-deletion analysis indicated that deleting any one item would not increase reliability; therefore, the measure was used in analyses. Limitations of using this measure will be discussed.

To test for homoscedasticity, normality of residuals, residuals were calculated and scatterplots were created of residuals against the independent variables. When examining patterns of heteroscedasticity, it appeared that the residuals of eating disorder psychopathology and the independent variables of thin ideal internalization, social comparisons, and social media use demonstrated heteroscedasticity. To test for possible clustering, two variables were created for school and region to determine if participants responded differently based on where they completed the survey. Residuals of the variables were plotted according to the school variable and the region variable. The

results indicated that clustering was not a concern in the data and therefore, the data was transformed. Initially, the eating disorder psychopathology composite variable was transformed using the log function; however, a heteroscedastic pattern remained. The eating disorder psychopathology composite variable was then transformed using the square root function, which appeared to sufficiently address this concern and satisfy the assumption. Individual subscales of eating disorder pathology (restraint, eating concerns, shape concerns, weight concerns) were also run within these diagnostics. However, these variables also demonstrated heteroscedasticity. Despite transformations, both square root and log, heteroscedasticity remained. Therefore, these variables were removed from analyses and only an eating disorder psychopathology composite variable was used. There were no other concerns about linearity, heteroscedasticity, or normality. A Bonferroni correction was used for the following regression models such that significance level was less than or equal to .006.

Preliminary analyses were conducted to determine if there are any significant differences in social media use, body dissatisfaction, thin ideal internalization, appearance comparisons, sociocultural pressure, and eating disorder psychopathology based on age or BMI. No group differences were noted for age. However, group differences in BMI were found for appearance comparisons and sociocultural pressure. Given such significant differences, BMI was entered as a covariate in the analyses with appearance comparisons and sociocultural pressure to control for its effects.

A series of simultaneous linear regression analyses were conducted to determine if social media use is a significant predictor of increased pressure from peers, parents, and the media. BMI was entered into this analysis to control for its effects. Another linear

regression model was conducted to examine if social media use is a significant predictor of body dissatisfaction.

A hierarchical multiple regression analysis was conducted to determine if thin ideal internalization is a moderator of the relationship between social media use and body dissatisfaction. An interaction variable was created by multiplying thin ideal internalization and social media and was added to the model. A second hierarchical multiple regression analysis was conducted to determine if appearance comparisons was also a moderator of the relationship between social media and body dissatisfaction. BMI was entered into this analysis to control for its effects. An interaction variable was created by multiplying appearance comparisons with social media and was added to the model.

Next, a linear regression model was conducted to determine if social media is a predictor of eating disorder psychopathology. A hierarchical multiple regression analysis was also conducted to determine if thin ideal internalization moderates the relationship between social media and eating disorder psychopathology. An interaction term was created by multiplying social media and thin ideal internalization and was added to the model. Finally, an additional hierarchical multiple regression model was computed to determine if appearance comparisons moderates the relationship between social media and eating disorder psychopathology. BMI was entered into this analysis to control for its effects. An interaction term was created by multiplying social media and appearance comparisons and was added to the model.

## CHAPTER THREE

### RESULTS

#### **Social Media Use and Body Image Disturbance**

Table 2 provides descriptive statistics for the study variables. The first aim of the current study was to examine the relationship between social media use, body image and eating disorder psychopathology. Table 3 shows the correlations among social media use, body image, and eating disorder psychopathology. The hypothesis was partly supported such that participants with higher levels of social media use reported higher levels of body dissatisfaction ( $r = .222, p < .00$ ). There were no significant relationships found for social media use with thin ideal internalization ( $r = .121, p = .002$ ), and appearance comparisons ( $r = .095, p > .01$ ). With regard to eating disorder psychopathology, there was no relationship between social media use and dietary restraint, eating concern, shape concern, weight concern or an overall eating disorder psychopathology ( $ps > .05$ ).

**Table 1.** Participant demographics.

Variable	<i>N</i> (%)	<i>Mean (SD)</i>
Age		19.11 (1.43)
Race		
Caucasian	463 (62.1)	
Hispanic	171 (22.9)	
Asian American	40 (5.4)	
African American	38 (5.1)	
Other (e.g. Biracial)	17 (2.3)	
American Indian	11 (1.5)	
Native Hawaiian	5 (.7)	
BMI		24.69 (5.93)
Underweight	41 (5.5)	
Healthy	430 (57.6)	
Overweight	157 (21.0)	
Obese	105 (14.1)	

**Table 2.** Descriptives for study variables.

Variable	Mean ( <i>SD</i> )
Social Media Use ( <i>N</i> = 694)	2.38 (.82)
Body Dissatisfaction ( <i>N</i> = 738)	3.62 (.77)
Internalization – Thin/Low Body Fat ( <i>N</i> = 729)	3.31 (.94)
Internalization – Muscular/ Athletic ( <i>N</i> = 730)	2.95 (1.04)
Pressures – Family ( <i>N</i> = 733)	2.26 (1.19)
Pressures – Peers ( <i>N</i> = 736)	2.03 (1.07)
Pressures – Media ( <i>N</i> = 735)	3.55 (1.31)
Sociocultural Pressure Total ( <i>N</i> = 728)	2.61 (.92)
Appearance Comparisons ( <i>N</i> = 745)	3.03 (1.13)
Eating Disorder Psychopathology – Restraint ( <i>N</i> = 739)	1.27 (1.31)
Eating Disorder Psychopathology – Eating Concerns ( <i>N</i> = 734)	.84 (1.08)
Eating Disorder Psychopathology – Shape Concerns ( <i>N</i> = 734)	2.40 (1.63)
Eating Disorder Psychopathology – Weight Concerns ( <i>N</i> = 736)	2.16 (1.61)
Eating Disorder Psychopathology – Composite ( <i>N</i> = 733)	1.64 (1.34)

The second aim of the current study was to examine the relationship between social media use and sociocultural pressures from peers, family, and media. This hypothesis was also mostly supported such that there was a significant, positive relationship between participants who reported higher levels of social media use and pressure from the media ( $r = .075, p < .001$ ) as well as pressure from peers ( $r = .085, p < .001$ ). However, there was no significant relationship between participant's social media use and pressure felt from family ( $p > .05$ ).

**Table 3.** Results of correlational analyses for social media use and body image variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Social Media Use	1												
2.Body Dissatisfaction	.222*	1											
3. Internalization – Thin/Low body fat	.121	.291**	1										
4. Internalization – Muscular/Athletic	.146*	.092*	.480**	1									
5. Pressures – Family	-.025	.172**	.283**	.158*	1								
6. Pressures – Peers	.085	.193**	.324**	.214**	.508**	1							
7. Pressures – Media	.075	.241**	.457**	.202**	.321**	.375**	1						
8.Sociocultural Pressure Total	.058	.263**	.467**	.250**	.781**	.786**	.757**	1					
9.Appearance Comparisons	.095	.343**	.515**	.301**	.297**	.354**	.486**	.498**	1				
10. Eating Disorder Pathology-Restraint	-.051	.165**	.438**	.320**	.357**	.308**	.310**	.423**	.434**	1			
11.Eating Disorder Pathology-Eating Concerns	-.012	.218**	.430**	.193**	.405**	.367**	.332**	.475**	.504**	.614**	1		
12.Eaitng Disorder Pathology-Shape Concerns	.029	.358**	.576**	.272**	.461**	.412**	.493**	.593**	.676**	.639**	.737**	1	
13.Eating Disorder Pathology-Weight Concerns	.032	.331**	.544**	.238**	.477**	.427**	.490**	.605**	.649**	.633**	.746**	.927**	1
14.Eating Disorder Pathology-Composite	-.018	.240**	.546**	.310**	.449**	.373**	.422**	.541**	.556**	.894**	.793**	.849**	.831**

\*p&lt;.001

### **Social Media Use within the Tripartite Influence Model**

Given the limited research to support mediated relationship between social media use and body image, the current study did not directly test the Tripartite Influence Model but rather used it as a conceptual framework during analyses. The third aim of this study is to examine social media use within the framework of the Tripartite Influence Model. A linear regression was run to determine whether social media use predicts sociocultural pressure, after controlling for BMI (Table 4). The model was found to be significant,  $F(1, 687) = 17.61, p < .00$ . Sociocultural pressure and BMI accounted for 4.7% of the variance in sociocultural pressure. The first hypothesis for this aim was not supported, as social media use was not a significant individual predictor of sociocultural pressure,  $p > .05, sr^2 = .003$ . BMI was a significant individual predictor, such that a one-unit increase in BMI was associated with a .03-unit increase in sociocultural pressure,  $t = 5.68, p < .00, sr^2 = .045$ .

A second linear regression was conducted to determine whether social media use predicts body dissatisfaction (Table 4). The model was found to be significant,  $F(1, 684) = 35.53, p < .00$ . Social media use accounted for 4.8% of the variance in body dissatisfaction. The hypothesis was supported, as social media use was a significant individual predictor of body dissatisfaction, such that a one unit increase in social media use was associated with a .21-unit increase in body dissatisfaction,  $t = 5.96, p < .00, sr^2 = .04$ .



**Table 4.** Linear regression analysis for prediction of sociocultural pressures and body dissatisfaction from social media use.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95 CI ( <i>b</i> )	<i>sr</i> <sup>2</sup>
Sociocultural pressures							
Social media use	.065	.042	.058	1.54	.124	-.018-.148	.003
BMI	.033	.006	.213	5.68	.000	.021-.044	.045
Body Dissatisfaction							
Social media use	.206	.034	.222	5.96	.000	.138-.273	.049

To determine whether social media use, thin ideal internalization, and an interaction term predicts body dissatisfaction, a hierarchical multiple regression was conducted (Table 5). The hypothesis was mostly supported. Social media use and thin ideal internalization were entered into the first step of the model. The first step was found to be significant,  $F(1, 676) = 41.84, p < .00$ . Social media use and thin ideal internalization accounted for 11% of the total variance in body dissatisfaction. Social media use was a significant individual predictor of body dissatisfaction,  $t = 5.09, p < .00, sr^2 = .03$ , such that a one-unit increase in social media was associated with a .17-unit increase in body dissatisfaction. Internalization of the thin ideal was a significant individual predictor, such that a one unit increase in internalization of the thin ideal was associated with a .20-unit increase in body dissatisfaction,  $t = 6.85, p < .00, sr^2 = .06$ .

The interaction term was then entered into the second step of the model. The second step of the model was found to be significant,  $F(1, 675) = 27.89, p < .00$ . The interaction term accounted for 11.0% of the variance in body dissatisfaction. Social media use was no longer a significant individual predictor of body dissatisfaction,  $p > .05, sr^2 = .004$ . Internalization of the thin ideal was a significant individual predictor,

such that a one-unit increase in internalization of the thin ideal was associated with a .23-unit increase in body dissatisfaction,  $t = 2.67$ ,  $p < .00$ ,  $sr^2 = .009$ . The interaction term indicated that thin ideal internalization did not moderate the relationship between social media use and body dissatisfaction  $p > .05$ ,  $sr^2 = .00$ .

**Table 5.** Hierarchical regression analysis for prediction of body dissatisfaction from social media use and thin ideal internalization.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95% CI ( <i>b</i> )	R <sup>2</sup>	<i>sr</i> <sup>2</sup>
Step 1							.110	
Social media use	.170	.033	.186	5.09	.000	.105-.236		.034
Thin Ideal Internalization	.200	.029	.251	6.86	.000	.143-.257		.062
Step 2							.110	
Social media use	.211	.111	.231	1.89	.058	-.007-.429		.004
Thin Ideal Internalization	.231	.087	.290	2.67	.008	.061-.401		.009
Interaction	-.013	.035	-.065	-.384	.701	-.081-.055		.000

To determine whether social media use and appearance comparisons predict body dissatisfaction, a multiple regression was conducted (Table 6). BMI was also entered into the regression to control for its effects. Social media use, appearance comparisons, and BMI were entered into the first step of the model. The first step was found to be significant,  $F(1, 676) = 40.35$ ,  $p < .00$ . Social media, appearance comparisons, and BMI accounted for 15% of the total variance in body dissatisfaction. Social media use was a significant individual predictor of body dissatisfaction,  $t = 5.18$ ,  $p < .00$ ,  $sr^2 = .03$ , such that a one-unit increase in social media was associated with a .17-unit increase in body

dissatisfaction. Appearance comparisons was a significant individual predictor, such that a one-unit increase in social comparisons was associated with a .18-unit increase in body dissatisfaction,  $t = 7.53, p < .00, sr^2 = .07$ . BMI was also a significant individual predictor, such that a one unit increase in BMI was associated with a .018-unit increase in body dissatisfaction,  $t = 3.97, p < .00, sr^2 = .02$ .

The interaction term was then entered into the second step of the model. The model was found to be significant,  $F(1, 675) = 32.84, p < .00$ . Social media use, appearance comparisons, BMI, and the interaction term accounted for 16.3% of the variance in body dissatisfaction. Social media use was a significant individual predictor, such that a one unit increase in social media use was associated with a .42-unit increase in body dissatisfaction,  $t = 4.71, p < .00, sr^2 = .03$ . In addition, appearance comparisons was a significant individual predictor of body dissatisfaction, such that a one unit increase in appearance comparisons was associated with a .38-unit increase in body dissatisfaction,  $t = 5.27, p < .00, sr^2 = .03$ . BMI was also a significant individual predictor, such that a one-unit increase in BMI was associated with a .018-unit increase in body dissatisfaction,  $t = 4.04, p < .000, sr^2 = .02$ . The interaction term was a significant individual predictor of body dissatisfaction,  $t = -2.98, p < .003, sr^2 = .01$ , such that a one-unit increase in the interaction term is associated with a -.09-unit decrease in body dissatisfaction. Appearance comparison was a significant moderator of the relationship between social media use and body dissatisfaction such that increased social media use had a significant but reduced impact on body dissatisfaction, when higher levels of appearance comparisons were present. The unstandardized simple slope of participants that were 1 *SD* below the mean of appearance comparisons was 3.24, the unstandardized

simple slope for participants with a mean level of appearance comparisons was 3.37, and the unstandardized simple slope for participants that were 1 *SD* above the mean of appearance comparisons was 3.49.

**Table 6.** Hierarchical regression analysis for prediction of body dissatisfaction from social media use and appearance comparisons.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95% CI ( <i>b</i> )	R <sup>2</sup>	<i>sr</i> <sup>2</sup>
Step 1							.152	
BMI	.018	.004	.142	3.97	.000	.009-.026		.019
Social media use	.172	.033	.185	5.18	.000	.107-.237		.033
Appearance Comparisons	.178	.024	.271	7.53	.000	.132-.224		.071
Step 2							.163	
BMI	.018	.004	.144	4.04	.000	.009-.026		.020
Social media use	.415	.088	.446	4.71	.000	.242-.588		.027
Appearance Comparisons	.383	.073	.585	5.26	.000	.240-.526		.034
Interaction	-.085	.029	-.443	-2.98	.003	-.142-.029		.011

A linear regression was used to test the hypothesis that social media use predicts eating disorder psychopathology (Table 7). The hypothesis was not supported. The model was found to be not significant,  $F(1, 684) = .132, p > .05$ . Social media use was not a significant predictor of eating disorder psychopathology,  $p > .05, sr^2 = .00$

**Table 7.** Linear regression analysis for prediction of eating disorder psychopathology from social media use.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95 CI ( <i>b</i> )	<i>sr</i> <sup>2</sup>
Social media use	.010	.028	.014	.363	.717	-.044-.064	.000

To determine whether social media use, thin ideal internalization, and an interaction term predict eating disorder psychopathology, a multiple regression analysis was conducted (Table 8). The hypothesis was not supported. Social media use and thin ideal internalization were entered into the first step of the model. The first step was found to be significant,  $F(1, 676) = 161.06, p < .00$ . Social media use and thin ideal internalization accounted for 32% of the total variance in eating disorder psychopathology. Social media use was not a significant individual predictor of eating disorder psychopathology,  $p > .05$ . Internalization of the thin ideal was a significant individual predictor, such that a one unit increase in internalization of the thin ideal was associated with a .20-unit increase in eating disorder psychopathology,  $t = 6.85, p < .00, sr^2 = .06$ .

The interaction term was then entered into the second step of the model. The model was found to be significant,  $F(1, 675) = 109.21, p < .00$ . Social media use, thin ideal internalization, and an interaction term accounted for 32.6% of the variance in eating disorder psychopathology. In this model, social media use was not a significant predictor of eating disorder psychopathology,  $p > .05$ . Internalization of the thin ideal was a significant individual predictor of eating disorder psychopathology, such that a one unit increase in thin ideal internalization was associated with a .48-unit increase in eating disorder psychopathology,  $t = 8.03, p < .00$ . Adding an interaction term to the model

indicated that thin ideal internalization did not moderate the relationship between social media use and eating disorder psychopathology,  $p > .05$ .

**Table 8.** Hierarchical regression analysis for prediction of eating disorder psychopathology from social media use and thin ideal internalization.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95% CI ( <i>b</i> )	R <sup>2</sup>	<i>sr</i> <sup>2</sup>
Step 1							.320	
Social media use	-.046	.023	-.063	-1.98	.048	-.091-.000		.003
Thin Ideal Internalization	.366	.020	.572	17.95	.000	.326-.406		.322
Step 2							.326	
Social media use	.104	.078	.144	1.34	.182	-.049-.257		.001
Thin Ideal Internalization	.479	.060	.749	8.03	.000	.362-.595		.064
Interaction	-.048	.024	-.296	-2.01	.044	-.095-.001		.004

To determine whether social media use, appearance comparisons, and an interaction term predict eating disorder psychopathology, a multiple regression was conducted (Table 9). Social media use and appearance comparisons were entered into the first step of the model. The first step was found to be significant,  $F(1, 676) = 129.74$ ,  $p < .00$ . Social media use and appearance comparisons accounted for 36% of the total variance in eating disorder psychopathology. Social media use was not a significant individual predictor of eating disorder psychopathology,  $p > .05$ . Appearance comparison was a significant individual predictor, such that a one unit increase in internalization of the thin ideal was associated with a .29-unit increase in eating disorder psychopathology,  $t = 18.24$ ,  $p < .00$ ,  $sr^2 = .32$ .

The interaction term was then entered into the second step of the model. The model was found to be significant,  $F(1, 675) = 25.53, p < .00$ . Social media use, appearance comparisons, BMI, and an interaction term accounted for 36.6% of the variance in eating disorder psychopathology. Social media use was not a significant individual predictor of eating disorder psychopathology,  $p > .05$ . Appearance comparisons was a significant individual predictor,  $t = 7.18, p < .00$ , such that a one unit increase in appearance comparisons was associated with a .35-unit increase in eating disorder psychopathology. BMI was also found to be a significant individual predictor  $t = 4.63, p < .00, sr^2 = .05$ , such that a one unit increase in BMI was associated with a .014-unit increase in eating disorder psychopathology. An interaction term indicated that appearance comparisons did not moderate the relationship between social media use and eating disorder psychopathology,  $p > .05$ .

**Table 9.** Hierarchical regression analysis for prediction of eating disorder psychopathology from social media use and appearance comparisons.

	<i>b</i>	SE	$\beta$	<i>t</i>	<i>p</i>	95% CI ( <i>b</i> )	R <sup>2</sup>	<i>sr</i> <sup>2</sup>
Step 1							.360	
BMI	.014	.003	.143	4.60	.000	.008-.020		.019
Social media use	-.030	.022	-.042	-1.35	.177	-.075-.014		.001
Appearance Comparisons	.295	.016	.568	18.24	.000	.263-.327		.321
Step 2							.366	
BMI	.014	.003	.144	4.62	.000	.008-.020		.020
Social media use	.036	.060	.049	.598	.550	-.082-.154		.000
Appearance Comparisons	.349	.049	.673	7.18	.000	.254-.445		.048
Interaction	-.023	.019	-.150	-1.18	.235	-.061-.015		.001

## CHAPTER FOUR

### DISCUSSION

The goal of the current study was to examine the relationships among social media use and body dissatisfaction, thin ideal internalization, appearance comparisons, and eating disorder psychopathology. Furthermore, these relationships were examined within the conceptual framework of the Tripartite Influence Model of body image disturbance. Results indicated that there is a significant, positive relationship between social media use and body dissatisfaction, internalization of the thin ideal, and appearance comparisons. Additionally, social media use was related to increased pressure from media and peers to meet appearance ideals. Social media use was not related to eating disorder psychopathology.

With regard to social media use, results of the current study indicated that the majority of the women (94.7%) used at least one form of social media, though many indicated that they used two or more forms (84.6%). Participants were asked if they used Facebook, Instagram, or Twitter and were also given the option to write in other forms of social media that they used. Recent research indicates that among adults who use the internet, 52% use two or more social media sites (Duggan, Ellison, Lampe, Lenhart, & Madden, 2014). The prevalence of social media use in the current study is likely higher than the findings of Duggan et al. (2014) due to the sample consisting of only college age females. Further, women in the current study reported spending, on average, 2.38 hours per day on social media sites. This is less than social media trends showing that adults aged 18 to 34 years spend, on average, 4.2 hours per day on social media sites (Ipsos Global, 2013). The lower frequency of social media use in the current study may be due



to the Ipsos Global (2013) study including males, which could account for a large portion of daily social media usage.

According to social media research, Facebook is the most widely used social media website, with 83% of internet users between the ages 18 to 29 using it (Duggan et al., 2014). Eighty-four percent of women in the current study reported using Facebook. However, slightly more women (86.3%) indicated using Instagram, which is inconsistent with the findings of Duggan and colleagues (2014). According to the study by Duggan and colleagues (2014), 53% of adults aged 18-29 use Instagram and 49% of them visit the site daily. Thirty-seven percent of adults 18-29 reported using Twitter (Duggan et al., 2014), whereas 59.7% of women in the current study reported using that site. Duggan and colleagues (2014) found that those who completed some college or higher education used Instagram and Twitter more than those with a high school degree or less education. Therefore, the higher frequency use of Instagram and Twitter in the current study may be due to this sample consisting of college students. Further, while social media use in the current study is based on Facebook, Twitter, and Instagram use combined, it is important to note that 53% of women in the current study also reported using another type of social media site including SnapChat, Tumblr, Yik Yak, Pinterest, and Tinder.

Study findings showed significant relationships between social media use and body image disturbance and eating disorder psychopathology. The hypothesis that more social media use would be associated with higher levels of body dissatisfaction, thin ideal internalization, appearance comparisons, and eating disorder psychopathology was partly supported. Consistent with previous research (Fardouly & Vartanian, 2015; Holland & Tiggemann, 2016; Meier & Gray, 2014; Stronge, Greaves, Milojev, West-Newman,

Barlow, & Sibley, 2015; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013), women who spent more time on social media websites such as Facebook, Twitter, and Instagram, were also more likely to experience higher levels of body dissatisfaction. This finding supports research suggesting that increased time on these websites may increase the exposure to appearance-related commentary, conversations, and content (Tiggemann & Miller, 2010) which may contribute to poor body image. Of note, Meier and Gray (2014) recently reported that overall Facebook use was not related to body dissatisfaction, but that use of appearance related applications such as posting photos was associated with body dissatisfaction. While additional research is needed in this area, it seems to be that the specific appearance-related activities may help explain the effect of social media sites on body image.

The hypothesis that social media would be a significant predictor of body dissatisfaction when examined within the framework of the Tripartite Influence Model was supported. There is limited research on social media and no research has examined social media within the Tripartite Influence Model. The Tripartite Influence Model of body image disturbance proposes that pressure about appearance from peers, media, and parents may negatively impact body dissatisfaction and development of disordered eating features (Thompson et al., 1999). Social media use has been shown to be related to appearance-related pressure from sociocultural factors such as peers, parents, and media (Smith et al., 2013; Tiggemann & Miller, 2010; Walther et al., 2008). Research has also demonstrated that social media use is associated with increased body dissatisfaction (Fardouly & Vartanian, 2015; Holland & Tiggemann, 2016; Meier & Gray, 2014; Stronge et al., 2015; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). The current

study suggests that social media may be another mechanism through which appearance-related pressure is experienced, as it is a significant predictor of body dissatisfaction. This is in line with the Tripartite Influence Model which demonstrates that pressure experienced from media sources influences body dissatisfaction.

Social media use was not associated with higher levels of thin ideal internalization in the current study. This finding is inconsistent with prior studies (Holland & Tiggemann, 2016; Meier & Gray, 2014; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). Tiggemann and Slater (2013) found that overall internet usage was associated with internalization of the thin ideal and drive for thinness in adolescent females. Further, using social media sites, such as MySpace and Facebook, was related to higher levels of internalization of the thin ideal, drive for thinness, and body surveillance (Tiggemann & Slater, 2013). Meier and Gray (2014) also found that use of photo applications on Facebook was related to increased thin ideal internalization, which was not the case for overall Facebook use. The authors note that this relationship is similar to the relationship between exposure to thin images in the media and internalization of the thin ideal. Meier and Gray (2014) indicate that exposure to appearance related or thin images is the aspect of Facebook use that linked to thin ideal internalization, which is consistent with previous research on exposure to magazine images (Harrison & Cantor, 1997).

The Tripartite Influence Model also proposes that thin ideal internalization and appearance comparisons mediate the relationship between sociocultural influences, body dissatisfaction, and eating disorder psychopathology. However, there was limited prior research to support a mediated relationship between social media use and body

dissatisfaction by thin ideal internalization and appearance comparisons. Previous research suggests that women who internalize the thin ideal and make appearance comparisons experience body dissatisfaction and are at higher risk for eating disorder psychopathology when exposed to thin images in the media (Groesz et al., 2002; Hausenblas et al., 2013). Therefore, the current study examined the relationship between social media use and body dissatisfaction with moderation analyses.

It was hypothesized that thin ideal internalization would moderate the relationship between social media use and body dissatisfaction; however, this hypothesis was not supported. As noted above, social media use was a significant predictor of body dissatisfaction, but when social media and thin ideal internalization were examined together as predictors of body dissatisfaction, social media use was no longer significant. Thin ideal internalization remained a significant individual predictor of body dissatisfaction, which supports prior research on thin ideal internalization (Brown & Dittmar, 2005; Groesz et al., 2002; Thompson et al., 1999; Tiggemann & McGill, 2004; Want et al., 2008). It is possible that those who internalized the thin ideal experienced higher body dissatisfaction, regardless of social media use, as it is a widely accepted predictor of body dissatisfaction (Brown & Dittmar, 2005; Cafri et al., 2005; Cusumano & Thompson, 1997; Groesz et al., 2002; Heinberg et al., 1995; Sands & Wardle, 2003; Thompson et al., 1999; Thomson & Stice, 2001).

The current study found that social media use was not related to appearance comparisons, which does not support previous research (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Kim & Chock, 2015; Meier & Gray, 2014; Walker et al., 2015). Meier and Gray (2014) found that adolescent females who used Facebook were

significantly different than non-Facebook users in appearance comparisons, such that they were more likely to engage in appearance comparisons. Increased use of such websites with appearance-related images allows for more opportunities to compare one's appearance with others. In addition, Fardouly et al. (2015) reported that young women who engaged in more appearance comparisons were more likely to be dissatisfied with their face, hair, and skin following exposure to Facebook. Given that Facebook's photo applications present more portrait images, it is likely that face, hair, and skin features are more salient than weight-related features (Fardouly et al., 2015).

Research has also shown that women who reported more Facebook use were less likely to report disordered eating when physical appearance comparisons were accounted for (Walker et al., 2015). This finding suggests that women who make appearance comparisons are also more vulnerable to disordered eating behaviors when exposed to Facebook. Thus, it is important to consider the role of appearance comparisons while examining the effects of social media use on body image and eating disorder psychopathology.

The hypothesis that appearance comparisons would moderate the relationship between social media use and body dissatisfaction was supported. Appearance comparisons negatively moderated the relationship between social media use and body dissatisfaction, such that increased social media use had a significant but reduced impact on body dissatisfaction, when higher levels of appearance comparisons were present. This finding is consistent with research indicating that appearance comparisons plays a key role in the relationship between social media use and body disturbance (Fardouly et al., 2015; Kim & Chock, 2015; Meier & Gray, 2014; Walker et al., 2015). Fardouly et al.

(2015) found that appearance comparisons positively moderated the relationship between social media use and body dissatisfaction, such that at high levels of comparison tendencies, women with a high frequency of Facebook use had high levels of dissatisfaction of specific features such as hair. Kim and Chock (2015) found that appearance comparisons positively mediated the relationship between Facebook use and drive for thinness such that high levels of appearance comparisons significantly predicted an increase in drive for thinness. Kim and Chock (2015) suggest that the use of social media increases appearance comparisons, which in turn increase body image disturbance.

Tiggemann and Miller (2010) found that thin ideal internalization and appearance comparisons mediated the relationship between appearance-related Internet use, including social media sites like Facebook or Myspace, and weight satisfaction and partially mediated the relationship between appearance-related Internet use and drive for thinness. Results indicated that social media use provides more opportunities for appearance related conversations and appearance comparisons to take place (Tiggemann & Miller, 2010). It is possible that increased opportunities to make appearance-related comparisons and engage in appearance-related conversations have stronger effects on body image disturbance than Facebook or other social media use alone. Further studies are needed to better understand the relationship between appearance comparisons, social media use, and body image disturbance.

The hypothesis that increased social media use would be associated with higher levels of pressure from peer and media influences was partly supported. Results suggest that social media may be one outlet in which peer and media influences are experienced. Social media use increases the exposure to appearance-related content and conversations

from peers, as well as increases exposure to appearance ideals such as thin celebrities, and other media messages (Tiggemann & Miller, 2010). Smith et al. (2013) suggested that negative social interactions with Facebook friends are related to disorder eating features. On social media sites such as Facebook, women are likely exposed to negative peer and media influences on body image. It is likely that the females in the current study are exposed to increased interactions with peer and media and therefore experience increased pressure on their appearance, possibly through increased time on social media.

Conversely, Walther and colleagues (2008) found that positive peer interactions based on appearance also affected the body image of Facebook users. Perceived attractiveness of one's Facebook friend was related to the original user's perceived attractiveness (Walther, Van Der Heide, Kim, Westerman, & Tom Tong, 2008). This study suggests that friends impact how one is viewed physically and that it is beneficial to have attractive friends. It seems that not only explicit conversations with peers about appearance but also implicit features of appearance affect body image for social media users. Finally, there was no relationship found between pressures from family and social media use in the current study. It is possible that participants do not interact with their family as often as peers on social media outlets, and therefore are not as susceptible to such influences on body dissatisfaction. This explanation is in line with research that suggests that most college-aged students use Facebook to connect with friends, and not parents. (Pempek, Yermolayeva, & Calvert, 2009).

The hypothesis that social media would be a significant predictor of increased pressure from sociocultural factors was not supported. Specifically, social media did not predict pressure from peers, family, and media. It is possible that this finding is due to a

mediator such as the peer interactions on social media sites, which was not examined in the current study. A recent study by De Vries and colleagues (2016) suggests that use of social media predicted higher peer influence on body dissatisfaction through appearance-related feedback. Additional research suggests that social media use was related to body image concerns, but the relationship was mediated by appearance comparisons with peers and celebrities (Fardouly & Vartanian, 2015). These findings suggest that the appearance-related feedback from peers and appearance comparisons with others on social media websites may explain the relationship between exposure to social media and body dissatisfaction. Such variables should be further investigated as potential mediators in future studies.

The hypothesis that increased social media use would be positively related to eating disorder psychopathology was not supported in the current study. Additionally, social media use did not predict eating disorder psychopathology within the framework of the Tripartite Influence Model. The limited prior research in this area indicated that increased social media use was related to greater levels of bulimic symptoms and episodes of overeating (Smith et al., 2013), which was not in line with findings of the current study. This discrepancy in findings may be due to the use of a composite eating disorder psychopathology score in the current study, which is different than the bulimia subscale and single item to measure overeating episodes used by Smith and colleagues (2013).

Thin ideal internalization and appearance comparisons did not moderate the relationship between social media use and eating disorder psychopathology. This finding is inconsistent with previous research that has demonstrated social media use is related to



social comparisons and disordered eating. Walker et al. (2015) suggest that when social comparisons are accounted for, Facebook users are less likely to endorse disordered eating. However, thin ideal internalization and appearance comparisons were significant predictors of eating disorder psychopathology, which is consistent with prior research (Ahern, Bennett, & Hetherington, 2008; Boone, Soenens, & Braet, 2011; Thompson & Stice, 2001; Tiggemann & Miller, 2010).

Women in the current study reported low to moderate levels of eating disorder psychopathology and moderately high levels of body dissatisfaction. Despite these low to moderate levels, body dissatisfaction and eating disorder psychopathology were positively correlated. Given that increased body dissatisfaction has been established as a risk factor for the onset of eating disorders (Stice, 2002; Stice, Marti, & Durant, 2011), it is possible that social media had an indirect effect on eating disorder psychopathology through its relationship with body dissatisfaction. Research examining body dissatisfaction as a possible mediator using the full Tripartite Influence Model is needed to better understand the relationship between social media use and eating disorder psychopathology.

### **Limitations**

Several limitations of the current study should be noted. First, the sample consisted only of undergraduate females. This female population was selected due to the high rates of body dissatisfaction and eating disorder psychopathology in college-aged women (Lawler & Nixon, 2011; Quick, Berg, Bucchianeri, & Byrd-Bredbenner, 2014). The results of the current study are not generalizable to males or other female age groups,

such as adolescents. Research indicates that time on social media is the most common computer activity for children and adolescents (Lenhart, 2012). As such, adolescents are likely exposed to appearance related content online and future research on social media and body image should include adolescents. The limited research on social media suggests that men who use social media are also likely to have increased body dissatisfaction (Holland & Tiggemann, 2016; Stronge et al., 2015).

Another limitation in the current study was the focus on Facebook, Instagram, and Twitter as the social media sources examined. This was based on previous research on social media, specifically Facebook, and body dissatisfaction (Rutledge et al., 2013; Smith et al., 2013; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). With the increase in popularity of other social media sites including SnapChat (Martin-Wilbourn Partners, 2015), it would be beneficial to investigate how other social media sites impact body dissatisfaction and eating disorder psychopathology in addition to Facebook, Instagram, and Twitter.

There were a few limitations with regard to the dataset that should also be noted. The body dissatisfaction measure, Eating Disorder Inventory-III-Body Dissatisfaction subscale (EDI-3-BD), demonstrated low reliability in the current sample. This measure was used because it had shown high internal consistency across several psychometric studies (Cronbach's alpha = .88 - .93; Clausen, Rosenvinge, Friborg, & Rokkedal, 2011; Garner, 2004; Lehmann et al., 2013). Given the low reliability of the EDI-3-BD in the current study, any findings pertaining to body dissatisfaction should be reviewed with caution, as the effects are likely to be attenuated. Additionally, there was an issue with coding for the Eating Disorder Examination-Questionnaire (EDE-Q). As mentioned in

the measures section, roughly 400 participants were not given the option to select “every day” in the Likert scale. Given the adequate internal consistency and similarity to the standardized measure, there was no transformation of data and the data from that school were combined with the other schools. However, without the option to indicate that they engage in disordered eating features “every day,” this possibly underestimated the amount of participants with severe pathology in this sample. Finally, the current study was a cross-sectional design and therefore, causal inferences cannot be drawn.

### **Future Research Directions**

Additional research is needed in order to further address the potential associations among social media use, body image, and eating disorder psychopathology. First, a psychometrically-sound measure of social media use would be most beneficial. Given the limited research in this area, the questions examining social media use, including average time spent on these websites, are not consistent across studies and therefore can limit replication. In addition, there is currently very limited research on social media use among males (Holland & Tiggemann, 2016; Stronge et al., 2015), despite initial evidence that men who use social media also report higher levels of body dissatisfaction. Further research with males is warranted. Additionally, recent research is indicating that it is likely the appearance related feedback one receives on social media websites that may be related to an increase in body dissatisfaction (De Vries et al., 2016). More research on types of appearance-related commentary is needed in this area to better understand the potential harmful effects of social media use. Finally, the current study was a

correlational method whereas an experimental design would be helpful to allow for causal explanations and stronger inferences about the directions of the effects.

### **Conclusions and Clinical Implications**

The current study found that use of social media is related to body dissatisfaction, thin ideal internalization, and appearance comparisons. Social media use was not related to eating disorder psychopathology. Social media use was not a significant predictor of increased pressure from peers and media influences or eating disorder psychopathology. In addition, thin ideal internalization did not moderate the relationship between social media use and body dissatisfaction. However, appearance comparisons negatively moderated the relationship between social media use and body dissatisfaction. The current study's significant findings support previous research showing that increased social media use is related to increased body dissatisfaction, thin ideal internalization, and appearance comparisons (Fardouly & Vartanian, 2015; Stronge et al., 2015; Tiggemann & Miller, 2010; Tiggemann & Slater, 2013.) Although there were limited significant findings when examining social media use within the framework of the Tripartite Influence Model, there was evidence indicating that social media use warrants continued attention in body image and eating disorder psychopathology research.

The current findings have potential clinical implications that are important to note. Social media use has increased in the past few years and continues to gain popularity among adolescents and young adults. The results indicated that social media use was positively related to increased body dissatisfaction, which may be related to appearance-related content and conversations that occur on such sites. Given the

popularity of social media sites and initial evidence demonstrating its potential negative impact on body dissatisfaction, the effect of using social media is an important issue to consider addressing in body image and eating disorder treatments. De Vries et al. (2016) suggest that interventions should address the negative impact of social media on body dissatisfaction using similar techniques from interventions that address the impact of exposure of thin images in the media on body dissatisfaction. Research has shown that media-literacy interventions prevented and reduced body dissatisfaction when exposed to thin images (Yamamiya et al., 2005). Yamamiya et al. (2005) found that exposing women to psychoeducational material explaining how thin ideal images in the media are unrealistic decreased body dissatisfaction. Media literacy interventions for social media can provide psychoeducation on the negative effects of social media including exposure to appearance-related conversations and negative feedback.

Furthermore, therapeutic approaches can also be applied to address the impact of social media on body dissatisfaction. Cash (1996) demonstrated that Cognitive-Behavioral Therapy (CBT) principles can be effectively applied to body image disturbances. CBT is a solution-focused therapy used to address cognitions, behaviors, and emotions related to various psychological disorders (Beck Institute, 2016). Interventions include cognitive restructuring to change maladaptive thoughts about appearance, exposure, and response prevention to address avoidance behaviors such as looking in a mirror (Cash, 1996; Jarry & Ip, 2005). With regards to social media, CBT can be used to identify maladaptive thoughts about appearance, appearance-related commentary, and negative interactions with peer and media influences. However, additional research is necessary to better understand the potential negative effects of

social media use and how to effectively target these issues in treatments for body image disturbances and eating disorder psychopathology.

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**APPENDIX A**  
**DEMOGRAPHICS**

Sex: Male

Female

Age: \_\_\_\_\_

Ethnicity: Hispanic or Latino

Not Hispanic or Latino

Race: American Indian or Alaska Native

African-American or Black

Asian

Native Hawaiian or Other Pacific Islander

White

Other (please specify): \_\_\_\_\_

Year in School: \_\_\_\_\_

Height (in inches): \_\_\_\_\_

Weight (in pounds): \_\_\_\_\_

## APPENDIX B

### SOCIAL MEDIA

1. Please indicate if you use any of the following websites.

- |              |     |    |
|--------------|-----|----|
| a. Facebook  | Yes | No |
| b. Twitter   | Yes | No |
| c. Instagram | Yes | No |
| d. Other     | Yes | No |

2. If yes, how long have you been using each website?

Years      Months

- |              |  |  |
|--------------|--|--|
| a. Facebook  |  |  |
| b. Twitter   |  |  |
| c. Instagram |  |  |
| d. Other     |  |  |

3. How long do you spend, on average, on these websites each day?

0 = None, 1 = 30 minutes or Less, 2 = about 1 hour, 3 = about 2 hours, 4 = about 3 hours, 5 = about 4 hours, 6 = about 5 hours, 7 = about hours or more

- |              |   |   |   |   |   |   |   |   |
|--------------|---|---|---|---|---|---|---|---|
| a. Facebook  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. Twitter   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. Instagram | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. Other     | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## APPENDIX C

### EDI-3-BD

For the items below, please indicate to what extent each statement is true of you.

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

		<b>Always</b>				<b>Never</b>	
1.	I think that my stomach is too big.	1	2	3	4	5	6
2.	I think that my thighs are too large.	1	2	3	4	5	6
3.	I think that my stomach is just the right size.	1	2	3	4	5	6
4.	I feel satisfied with the shape of my body.	1	2	3	4	5	6
5.	I like the shape of my buttocks.	1	2	3	4	5	6
6.	I think my hips are too big.	1	2	3	4	5	6
7.	I feel bloated after eating a normal meal.	1	2	3	4	5	6
8.	I think that my thighs are just the right size.	1	2	3	4	5	6
9.	I think my buttocks are too large.	1	2	3	4	5	6
10.	I think that my hips are just the right size.	1	2	3	4	5	6

## APPENDIX D

### SOCIOCULTURAL ATTITUDES TOWARDS APPEARANCE QUESTIONNAIRE – 4

Directions: Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1  
 Mostly Disagree = 2  
 Neither Agree Nor Disagree = 3  
 Mostly Agree = 4  
 Definitely Agree = 5

	<b>Definitely Disagree</b>					<b>Definitely Agree</b>
1. It is important for me to look athletic.	1	2	3	4	5	5
2. I think a lot about looking muscular.	1	2	3	4	5	5
3. I want my body to look very thin.	1	2	3	4	5	5
4. I want my body to look like it has little fat.	1	2	3	4	5	5
5. I think a lot about looking thin.	1	2	3	4	5	5
6. I spend a lot of time doing things to look more athletic.	1	2	3	4	5	5
7. I think a lot about looking athletic.	1	2	3	4	5	5
8. I want my body to look very lean.	1	2	3	4	5	5
9. I think a lot about having very little body fat.	1	2	3	4	5	5
10. I spend a lot of time doing things to look more muscular.	1	2	3	4	5	5

Answer the following questions with relevance to your Family (include: parents, brothers, sisters, relatives):

11. I feel pressure from family members to look thinner.	1	2	3	4	5	5
12. I feel pressure from family members to improve my appearance.	1	2	3	4	5	5
13. Family members encourage me to decrease my level of body fat.	1	2	3	4	5	5
14. Family members encourage me to get in better shape.	1	2	3	4	5	5

Answer the following questions with relevance to your Peers (include: close friends, classmates, other social contacts):

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 15. My peers encourage me to get thinner.                          | 1 | 2 | 3 | 4 | 5 |
| 16. I feel pressure from my peers to improve my appearance.        | 1 | 2 | 3 | 4 | 5 |
| 17. I feel pressure from my peers to look in better shape.         | 1 | 2 | 3 | 4 | 5 |
| 18. I get pressure from my peers to decrease my level of body fat. | 1 | 2 | 3 | 4 | 5 |

Answer the following questions with relevance to the Media (include: television, magazines, the Internet, movies, billboards, and advertisements):

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 19. I feel pressure from the media to look in better shape.          | 1 | 2 | 3 | 4 | 5 |
| 20. I feel pressure from the media to look thinner.                  | 1 | 2 | 3 | 4 | 5 |
| 21. I feel pressure from the media to improve my appearance.         | 1 | 2 | 3 | 4 | 5 |
| 22. I feel pressure from the media to decrease my level of body fat. | 1 | 2 | 3 | 4 | 5 |

## APPENDIX E

### EATING DISORDER EXAMINATION – QUESTIONNAIRE (EDE-Q)

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each questions carefully. Please answer all of the questions.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

On how many of the past 28 days...	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1. Have you been deliberately <i>trying</i> to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2. Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3. Have you <i>tried</i> to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4. Have you <i>tried</i> to follow definite rules regarding your eating (e.g., a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5. Have you had a definite desire to have an <i>empty</i> stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6. Have you had a definite desire to have a <i>totally flat</i> stomach?	0	1	2	3	4	5	6
7. Has thinking about <i>food, eating, or calories</i> made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6
8. Has thinking about <i>shape or weight</i> made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6
9. Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10. Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11. Have you felt fat?	0	1	2	3	4	5	6
12. Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13 – 18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

**Over the past four weeks (28 days)...**

13. How many *times* have you eaten what other people would regard as an unusually large amount of food (given the circumstances)? \_\_\_\_\_
14. On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)? \_\_\_\_\_
15. How many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food *and* have had a sense of loss of control at the time)? \_\_\_\_\_
16. How many *times* have you made yourself sick (vomit) as a means of controlling your shape or weight? \_\_\_\_\_
17. How many *times* have you taken laxatives as a means of controlling your shape or weight? \_\_\_\_\_
18. How many *times* have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat, or to burn off calories? \_\_\_\_\_

Questions 19 – 21: Please circle the appropriate number. *Please note that for these questions, the term “binge eating” means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.*

- |     |  |                          |                           |                       |                          |                       |                          |                   |
|-----|--|--------------------------|---------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-------------------|
| 19. | Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)?<br>...Do not count episodes of binge eating.   | <b>No days</b>           | <b>1-5 days</b>           | <b>6-12 days</b>      | <b>13-15 days</b>        | <b>16-22 days</b>     | <b>23-27 days</b>        | <b>Every day</b>  |
|     |  | 0                        | 1                         | 2                     | 3                        | 4                     | 5                        | 6                 |
| 20. | On what proportion of the times that you have eaten have you felt guilty (felt that you’ve done wrong) because of its effect on your shape or weight?<br>...Do not count episodes of binge eating. | <b>None of the times</b> | <b>A few of the times</b> | <b>Less than half</b> | <b>Half of the times</b> | <b>More than half</b> | <b>Most of the times</b> | <b>Every time</b> |
|     |  | 0                        | 1                         | 2                     | 3                        | 4                     | 5                        | 6                 |
| 21. | Over the past 28 days, how concerned have you been about other people seeing you eat?<br>...Do not count episodes of binge eating.   | <b>Not at all</b>        | <b>Slightly</b>           |                       | <b>Moderately</b>        |                       | <b>Markedly</b>          |                   |
|     |  | 0                        | 1                         | 2                     | 3                        | 4                     | 5                        |                   |

Questions 22 – 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

- |                                 |   |                   |                 |   |                   |   |                 |   |
|---------------------------------|---|-------------------|-----------------|---|-------------------|---|-----------------|---|
| <b>Over the past 28 days...</b> |   | <b>Not at all</b> | <b>Slightly</b> |   | <b>Moderately</b> |   | <b>Markedly</b> |   |
| 22.                             | Has your weight influence how you think about (judge) yourself as a person?   | 0                 | 1               | 2 | 3                 | 4 | 5               | 6 |
| 23.                             | Has your shape influenced how you think about (judge) yourself as a person?   | 0                 | 1               | 2 | 3                 | 4 | 5               | 6 |
| 24.                             | How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks? | 0                 | 1               | 2 | 3                 | 4 | 5               | 6 |

25.	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26.	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27.	How uncomfortable have you felt seeing your body (e.g., seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28.	How uncomfortable have you felt about others seeing your shape or figure (e.g., in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate)

\_\_\_\_\_

What is your height? (Please give your best estimate)

\_\_\_\_\_

If female: Over the past three to four months, have you missed any menstrual periods?

\_\_\_\_\_

- If so, how many?
- Have you been taking the “pill”?

\_\_\_\_\_

\_\_\_\_\_



## APPENDIX F

### PHYSICAL APPEARANCE COMPARISON SCALE- REVISED (PACS-R)

Use the following scale:

Never	Seldom	Sometimes	Often	Always
<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

1. When I'm out in public, I compare my physical appearance to the appearance of others.	0	1	2	3	4
2. When I meet a new person (same sex), I compare my body size to her body size.	0	1	2	3	4
3. When I'm at work or school, I compare my body shape to the body shape of others.	0	1	2	3	4
4. When I'm out in public, I compare my body fat to the body fat of others.	0	1	2	3	4
5. When I'm shopping for clothes, I compare my weight to the weight of others.	0	1	2	3	4
6. When I'm at a party, I compare my body shape to the body shape of others.	0	1	2	3	4
7. When I'm with a group of friends, I compare my weight to the weight of others.	0	1	2	3	4
8. When I'm out in public, I compare my body size to the size of others.	0	1	2	3	4
9. When I'm with a group of friends, I compare my body size to the body size of others.	0	1	2	3	4
10. When I'm eating in a restaurant, I compare my body fat to the body fat of others.	0	1	2	3	4
11. When I'm at the gym, I compare my physical appearance to the appearance of others.	0	1	2	3	4