

5-2020

Instagram and Eating Disorders: An Empirical Study of the Effects of Instagram on Disordered Eating Habits Among Young Girls

Katherine Wayles
University of Arkansas, Fayetteville

Follow this and additional works at: <https://scholarworks.uark.edu/etd>



Part of the [American Popular Culture Commons](#), [Communication Technology and New Media Commons](#), [Critical and Cultural Studies Commons](#), [Graphic Communications Commons](#), [Mass Communication Commons](#), [Public Relations and Advertising Commons](#), and the [Social Media Commons](#)

Citation

Wayles, K. (2020). Instagram and Eating Disorders: An Empirical Study of the Effects of Instagram on Disordered Eating Habits Among Young Girls. *Graduate Theses and Dissertations* Retrieved from <https://scholarworks.uark.edu/etd/3595>

This Thesis is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of ScholarWorks@UARK. For more information, please contact scholar@uark.edu.

Instagram and Eating Disorders: An Empirical Study of the
Effects of Instagram on Disordered Eating Habits Among Young Girls

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Journalism

by

Katherine Wayles
University of Arkansas
Bachelor of Arts in Journalism, 2018

May 2020
University of Arkansas

This thesis is approved for recommendation to the Graduate Council.

Jee Young Chung, Ph.D.
Thesis Director

Rob Wells, Ph.D.
Committee Member

Ron Warren, Ph.D.
Committee Member

Abstract

Scholars have studied the relationship between body dissatisfaction and social media use, particularly focusing on young women as vulnerable consumers. Many studies concentrate on the amount of media consumed, rather than the specific activities and behaviors associated with feelings of low self-esteem or poor body image. It is important to determine exactly what behaviors and social media engagements contribute to disordered relationships with food, assessing a user's pre-existing weight/body concerns in relation to the amount and type of media they consume. Instagram in particular is included in this study, as it is an image-based social networking site where users can engage with peers and celebrities, recently emerging as an advantageous advertising site for companies. This study uses the Tripartite Model of Influence to determine the correlation between Instagram usage and self-esteem, as family, friends and media contribute to the growth and development of a young woman's self-esteem and relationship with food. It is imperative that these measures be taken into account to further understand social media's influence on consumers, particularly young women who, through the Social Comparison Theory, are at risk for developing eating disorders and body dysmorphia. Through a comprehensive questionnaire about individual activities, experiences and engagements on Instagram, this study of 187 media users was able to correlate many disordered behaviors and beliefs with Instagram usage.

Table of Contents

<i>Introduction</i>	1
Literature review.....	4
Instagram.....	5
Instagram behavior and upward comparison	7
Rewarding the thin ideal	10
Self-esteem and thin ideal consumption	13
Body dissatisfaction and the thin ideal	14
The dual pathway model: Media consumption & body dissatisfaction.....	17
Tripartite Influence Model.....	18
<i>Methods</i>	22
Participants.....	22
Procedures.....	23
Independent variables	23
Dependent variables.....	25
Behavioral/physical eating disorders	27
<i>Results</i>	33
Instagram usage and cognitive eating disorders	33
Instagram usage and behavioral eating disorders	35
Instagram usage and body dissatisfaction.....	36
Instagram usage and PACS.....	36
Instagram usage and CPSA.....	37
<i>Discussion</i>	38
Instagram usage and cognitive eating disorders	39
Instagram usage and behavioral eating disorders	41
Instagram usage and PACS.....	42
Instagram usage and CPSA.....	44
Limitations	44
Directions for future research	45
Conclusion	46
<i>References</i>	47
<i>Appendices</i>	58

Appendix 1: Instagram Engagement Questionnaire	58
Appendix 2: Eating Behavior Questionnaire	59
Appendix 3: Physical Appearance Comparison Scale: Pre-Test	61
Appendix 4: Competition Stress and Physical Appearance (CSPA): Pre-Test	62
Appendix 5: Attitude Questionnaire	64
Appendix 6: The CSPA Post-Test	65
Appendix 7: IRB Approval.....	66

Introduction

Mass media is a broad form of technological communication that influences global audiences by reflecting sociocultural values, beliefs, trends and attitudes (Comstock & Scharrer, 2007). Mass media include traditional forms of broad-audience communication (i.e., television, broadcast radio, etc.) and new, evolving communication outlets like social media (i.e., Instagram, Facebook, etc.). Media may be the most important influence in the lives of young people as learn from their interactions online, particularly with peer groups, friends, online social circles, and discussion groups (Hargreaves & Tiggemann, 2004; Stice, Schupak-Neuberg, Shaw, & Stein, 1994). Social media, in particular, allows individuals to communicate with and influence their audience in new and exciting ways. While these advancements allow the average person to communicate more broadly, the effects of said communication are significantly different than those of traditional platforms (Bessenoff, 2006). Social media allows individuals to communicate with one another, sharing and participating in social networking and creating a sense of community not found in other mass media outlets like television, magazines, etc. (Bessenoff, 2006). This sense of community has both positive and negative implications. The negative implications include, but are not limited to, underdeveloped social behaviors, stress and an inability to engage in face-to-face communication (Mabe, Forney & Keel, 2014). Adolescent studies have verified the unique effects of social media usage, attributing it to an increase in violence (O’Keeffe & Clarke-Pearson, 2011), sexualization (Ramsey & Horan, 2016) and narcissism (Buffardi & Campbell, 2008). Recent studies also suggest that time spent on social media sites may lead to a low sense of self-worth and negative body image (Eckler, Kalyango & Paasch, 2017; Mabe et al., 2014; Smith, et al., 2013). Social media, while sometimes a positive social influence in the lives of young people, can also be a source of competition and comparison

amongst young men and women (Bessenoff, 2006). With the influx of brands on social media, there can be confusion between what is social networking and what is active advertising.

Previous research has studied the relationship between consumers and brands, focusing on the impact of advertisements on traditional media users (Conley & Ramsey, 2011). Recently, however, studies are focusing on how consumers interact not only with brands, but with one another, as their social circles have extended to include celebrities and influencers (Ferguson, 2013). When users engage with both peers and celebrities on Instagram, they may be unknowingly increasing their appearance anxiety and competition stress (Bessenoff, 2006). This study is concerned with the attitude and behavior of Instagram consumers, particularly focusing on the ways they interact with one another, celebrities, influencers and brands. When consumers originally began using Instagram, it was a peer-networking site (Woods, 2013). Today, however, brands, celebrities and influencers have entered the space, possibly creating a sense of dissonance and confusion amongst consumers (Maltby, Houran, & McCutcheon, 2003). Instead of interacting purely with peers on Instagram, consumers are now engaging with paid advertisers and celebrity influencers (Woods, 2013). This change in environment can cause confusion in the minds of consumers as they are accessing a historically consumer-controlled social networking site that has changed into a profitable, advertising sphere (Maltby et al., 2003). Previously, celebrities and influencers behaved independently, posting photos of their lives and activities, but the influx of advertising has caused a change in the Instagram environment. It is important now, more than ever, for Instagram celebrities to post attractive, engaging photos to better sell products and maintain their advertising revenue. The timing of this study is unique as the atmosphere of Instagram is changing to include brands and advertisements. Social media figures, then, are presenting more edited and filtered versions of themselves to make financial profit from

the brands they support and the users they engage with. This can further confuse Instagram users as these celebrities are no longer behaving as “friends,” but more as models for advertising purposes. Young adults may still feel they are engaging with the celebrities/influencers themselves without realizing their engagements are used for financial gain. Instead of following just the user, they are now engaging with brands and advertisements instead of everyday people. This can affect perception, confusing Instagram users as the quality of posts is changing and improving to combat the competitive advertising environment, rather than just competing amongst other users.

Through Social Comparison Theory, the dual pathway model and the Tripartite Influence Model, young people, women in particular, are susceptible to the negative and unrealistic images of women in advertisements as they internalize these stereotypical portrayals and are societally expected to adhere to these ideals (Gerbner, 1998; Van Lange, Kruglanski & Higgins, 2012). It is important to study the effects of social media on consumers, particularly young media consumers, as they are more vulnerable to the effects of advertising, including body dissatisfaction and eating disorders (Barth & Starkman, 2016). Through a quantitative survey, this study looks to determine the correlation between Instagram engagement and body dissatisfaction which can manifest into disordered eating behaviors.

This study aims to identify the possible impact of social media use on users’ body image, focusing primarily on young women as they are more likely to develop eating disorders and body dissatisfaction, competition stress and low self-esteem (Barth & Starkman, 2016). This study is important in this era of media advertising as Instagram is a platform used by young people, brands, celebrities and advertisers. Social media effects are being heavily focused on in advertising and psychological research as their influence is developing at increasingly fast rates

as younger generations are interacting more with a multitude of platforms. Instagram in particular is primarily an image-based social networking site designed to bolster online and real-life relationships. Because social media sites have only been implemented in the late 2000s, the long-lasting effects of social media engagement is unknown. This study looks to determine how social media engagement relates to body image, eating disorders and competition stress, particularly amongst young women. Theoretically, young people are influenced by people they are regularly in contact with, especially family, friends and the media. Previous studies have determined that media, social media in particular, can be a negative influence in the lives of young people, especially in regard to self-esteem and body image issues. This study looks to determine if there is a correlation between low self-esteem/body dissatisfaction and time spent on Instagram, particularly focusing on specific relationships and engagements. This information could inform young people of the dangers of social media, possibly creating regulations and improving personal awareness. This information could help young people put social media in perspective and understand why they may be experiencing low levels of self-esteem/self-worth.

Literature review

Mass media are influential mediums from which people learn acceptable behaviors and judge how they conform or do not conform to societal standards (Comstock & Scharrer, 2007; Harris, 2013). Many studies have discovered the correlation between media and body dissatisfaction amongst young women, indicating that female consumers are negatively influenced by images of other women, particularly those that represent the idealized body (e.g., Eckler et al., 2014; Grabe et al., 2008; Levine & Murnen, 2009; Mabe et al., 2014; Smith et al., 2013). The idealized body is typically thin with disproportionately large breasts and buttocks (Ferguson, 2013; Levine & Murnen, 2009). This body type is unattainable for the general

population and less than two percent of actual female bodies adhere to this standard (Grabe, et al., 2008). With modern advancements like photoshop and enhancement surgeries, it is becoming increasingly difficult for consumers to determine which aspects of a photo are natural and which are edited (Hawkins et al., 2004; Hern, 2018).

Many users report that they use Instagram to “stay in touch” with friends and colleagues, and to stay up to date with the lives of celebrities and influencers, gaining knowledge about what is fashionable and desirable from the site (Ramsey & Horan, 2016). Because Instagram serves as both a social networking site and a place of information and celebrity gossip, it is important to study the particular behaviors that each user participates in and who they are engaging with when they access the site. Researchers have found that *what* users do on social media is just as important as *who* they are doing said behaviors with (Meier & Gray, 2014).

Graff (2008) found that higher levels of thin ideal internalization predict body dissatisfaction, which is also associated with heightened levels of eating disorders and unhealthy eating behaviors. When combined with pre-existing body concerns and an appearance-based self-schema, media can serve as models of reinforcement, influencing young women to adhere to unattainable standards by advertising social rewards and benefits for those that conform (Hargreaves & Tiggemann, 2002; Levine & Murnen, 2009).

Instagram

Instagram is widely popular among young people, young women in particular, according to Statista. The United States has the largest population of Instagram users, with over 115 million people accessing the application (Chen, 2020). Instagram has a large global presence, with 73 million people accessing the app in India, and another 72 million in Brazil (Chen, 2020). According to Statista, over 30 percent of teenagers in the United States rate Instagram as their

favorite social network, and over 40 percent of women use Instagram (Chen, 2020).

Additionally, the target demographic, teenagers and young adults, are very active on the app, with over 72 percent of 13-17-year old people reporting active use and 75 percent of 18-24 year people using Instagram (Chen, 2020).

Financially, Instagram is growing in influence, with over 800 million users, growing at nearly 360 percent (+357 percent). In 2019, advertising on Instagram reached \$2.3 billion (Routley, 2017). The app also reports significant influence on purchase decisions, as nearly 72% of Instagram users report they have made purchase decisions based on an Instagram advertisement (Routley, 2017).

The financial and social benefits of Instagram may not outweigh the negative effects, the main focus of this particular study. A report by the Royal Society for Public Health in the UK surveyed over 1,500 people between the ages of 14 and 24 to pinpoint the effects of social media platforms, focusing mainly on anxiety, depression and body image issues (Firestone, 2020). According to the survey, Instagram has the most negative effect on young people's mental health, reporting it negatively affects body image and sleep, increasing bullying, anxiety, depression and loneliness (Firestone, 2020). This study is particularly powerful as anxiety and depression has increased by over 70 percent in young people over the last 25 years (Firestone, 2020). The authors report, "Using social media for more than two hours per day has been independently associated with poor self-rating of mental health, increased levels of psychological distress and suicidal ideation," (Firestone, 2020). The negative impact of Instagram on young people has not been thoroughly studied as the application is relatively new. This study looks to offer further insight into the lasting impressions of the application on the minds of young people, young women in particular.

Instagram Behavior and Upward Comparison

Previous studies suggested that time spent on social media was the biggest influence on a user's perception of self, meaning the more time spent on media, the more likely a user was going to develop low self-esteem (Stice & Bearman, 2001). Tiggemann and Miller (2010), however, elaborated on this connection, determining that while time is a substantially sound measurement of interaction, it is more likely that time spent engaging in specific activities, particularly appearance-related exposures, affects consumers the most. This finding prompted researchers to determine if there are additional contributors to low self-esteem, in addition to time and post engagement. Meier and Gray (2014) performed a study of Facebook that echoed Tiggemann and Miller's (2010) findings, reporting a positive correlation in photo-related Facebook activities and body image problems. These findings prompted researchers to study the time spent engaging in specific operations, rather than just studying the overall time spent on social media sites.

Frison and Eggermont (2016) determined that social networking sites are hubs of two forms of behavior: active and passive usage. Active usage/engagement includes liking and posting photos/videos, engaging with other users and regularly updating online profiles (Frison & Eggermont, 2016). Active social media engagement is beneficial for a user's self-esteem as self-presentation and self-disclosure aid an individual's social growth (Vogel et al., 2014). Active social media usage facilitates psychosocial adaptation, defined as the behavioral and cognitive advancements an organism uses to survive in a group (Vogel et al., 2014; Toma & Hancock, 2013). This adaptation is formed from the reward process of "likes" on Instagram, the fundamental driving force behind the site. Instagram is based on reward processes where "likes" are given as rewards to people who adhering to a certain image, particularly one that portrays

users as thin, healthy, happy and active (Hern, 2018). This reward system was further advanced in 2016 when Instagram created an algorithm that populates feeds with popular content rather than recent content (Hern, 2018). For regular users and especially people who financially benefit from the site (i.e., influencers), it is advantageous to post photos that will generate “likes,” posting content that adheres to the societal standard of beauty and success (Hern, 2018). When users engage with Instagram and are rewarded for it, they are positively affected by the site, experiencing high levels of self-esteem.

Passive engagement, however, is the detached, unemotional consumption of other users’ posts and updates (Mukherjee & Jansen, 2017). When users behave passively, they are more likely to experience low levels of self-esteem as they do not receive rewards or positive reinforcement from the site (Mukherjee & Jansen, 2017). Furthermore, passive consumption can lead to low levels of self-worth and high levels of negative affect as information published on Instagram is typically unrealistic and overly positive, with people presenting the best image of themselves on social media (Kross et al., 2013; Verduyn et al., 2015). Regardless of what Instagram users are actually experiencing, they are, through the reward system and Instagram algorithm, encouraged to post pictures that indicate the user is living an enviable, enjoyable lifestyle (Hern, 2018). Consuming these images, and not actively participating in this behavior can lead to creates confusion for passive users, as they may compare themselves to the images presented online without considering the level of distortion (Feinstein et al., 2013). Young consumers, in particular, are vulnerable to this distortion as they may not understand the level of editing and photoshop that goes into an individual’s Instagram post.

Passive social media engagement is additionally dangerous when users consume images of people who seem more successful or attractive than themselves (Feinstein et al., 2013; Vogel

et al., 2015). This type of comparison is prevalent on social media sites, Instagram in particular, as the nature of the site encourages users to present themselves in their best light (Hern, 2018). This process of comparison is called “upward social comparison,” which leads to low levels of self-esteem and self-worth (Feinstein et al., 2013; Liu et al., 2017). Social comparison is a natural response to social interaction, as people learn through interactions and internal comparisons to those surrounding them (Stice et al., 2001). Social comparison is detrimental to mental health, however, when people include celebrities/influencers, professional models and people of significantly higher social standing in their imagined social circle. Instagram is unique as users are able to engage with celebrities, brands and influencers while simultaneously engaging with friends and family.

When social media consumers follow and engage with as many celebrities as they do friends/peers, they may begin to unknowingly include them in their social sphere, making celebrities/influencers a reasonable person to compare themselves to (Hayes & Rich, 2002). This subconscious upward social comparison is experienced by many social media users, however those with a neurotic obsession with their appearance can experience depression and anxiety from this behavior (Hayes & Rich, 2002). Upward comparison, especially when users compare themselves to professional models or actors, is particularly unhealthy considering the usage of photoshop, professional lighting or editing, celebrities use to appear more attractive on Instagram (Maltby, Houran & McCutcheon, 2003).

Active social media engagement may be just as negative as passive engagement, according to a study performed by Ruckel and Hill in 2017. They reported that active social media engagement contributes more to negative self-esteem than passive engagement as adherence to societal ideals is positively correlated with an increase in acceptance, shown on

Instagram as the number of “likes,” comments and positive engagements (Ruckel & Hill, 2017). When users post photos/engage on Instagram and do not receive the expected rewards, they are likely to experience low self-esteem (Ramsey & Horan, 2016). Furthermore, Ruckel and Hill (2017) found that these individuals may begin to assume people do not want to engage with them or are not impressed by their appearance/lifestyle.

Meier and Gray (2014) studied how social media engagement can affect a user’s sense of reality, extending outside of the site. When users do not receive the rewards they expected, they presume that other users have a low opinion of them, regardless of people’s actual opinions (Meir & Gray, 2014). Internalizing self-worth from the presumed opinions of others is detrimental to body image and can contribute to lowered feelings of self-worth, as the level of social media engagement does not necessarily represent what people actually think about the Instagram user. Vogel et al. (2014) discovered that other users’ opinions are very important to an Instagram user’s sense of self-worth. Believing that they are not presenting the correct image may lead active social media users to distort the image of themselves to better adhere to the societally accepted/rewarded ideals.

Rewarding the Thin Ideal

Western beauty can be comprehensively defined by the thin ideal. The “thin ideal” is the advertised “perfect” female body displayed in media as a slender woman whose weight is advertised within the optimal standard within timely and cultural contexts (Graff et al., 2003; Levine, 2010). The thin ideal has been defined differently each decade, with researchers first looking to determine the exact standards in the 1980s, when Garner Garfinkel, Schwartz, and Thompson (1980) studied the changing bodies of Playboy centerfolds. These models have historically represented the “epitome of the female body shape ideal” (Cusumano & Thompson,

1997; Garner et al., 1980). Garner et al. (1980) followed the centerfolds within a 20-year period (1959-1978) and determined that the mean weight of these women was significantly lower than that of the average female during that time (Cusumano & Thompson, 1997; Garner, et al., 1980). Additionally, Wiseman, Gray, Mosimann, and Ahrens (1992) repeated the experiment and found that the bust and hip measurements of the models decreased from 1959 to 1988, finding that the average weight of a Playboy centerfold was 13-19% lower than the weight considered “normal” for women of their same height (Cusumano & Thompson, 1997). The thin ideal, the “perfect female body,” therefore, is not, and has never been representative of actual female bodies. This discrepancy creates dissonance between media consumers, their expectations of women and what is physically attainable for actual female bodies (Grabe et al., 2008).

This disconnect is felt internally by women, defined as the, “internalization of the thin ideal” (Graff et al., 2003). Internalization can be defined as the perceived pressure to adhere to the thin ideal, regardless of physical limitations (Cusumano & Thompson, 1997). The preoccupation with the thin ideal can lead to mental issues, particularly when individuals engage in self-objectification, which is defined as the belief that an individual’s body is an object to be controlled, consumed and valued based on appearance and the ability to adhere to media ideals (Grabe et al., 2008; Thompson & van den Berg, 2004). Pop culture has always used the female body to sell, with studies focusing on how advertisers and media advertise female bodies as objects, rather than legitimate human beings (Grabe et al., 2008). Through the Cultivation Theory, it is apparent that over time, consumption of these images/beliefs can lead women to believe they too should be advertised as an object (Grabe et al., 2008).

Objectification is both an external and internal issue, beginning in adolescence and increasing in prevalence throughout adulthood, as media reiterate the importance of the thin ideal

by advertising the female body as an object valued on appearance (Peter & Valkenberg, 2007). When the media sexualizes women, they are advertising the female body not only to men, but to female consumers (Vaes et al., 2011). Instead of advertising products or sex to women through sexual objectification, media advertise the thin ideal and the lifestyle/attention given to thin, sexually attractive women (Peter & Valkenberg, 2007). When women consume large quantities of these images on television, in magazines or on social media sites, they may compare themselves to the objectified portrayals of other women, considering the amount of praise and acceptance these women appear to gain through objectification and adherence to the thin ideal (Aubrey, 2006). Media consumption then, is positively correlated with self-objectification, which increases body shame and dieting habits amongst women desiring an increase in attention and social acceptance (Aubrey, 2007; Morry & Staska, 2001; Harper & Tiggemann, 2008).

Online self-objectification is linked to the need to engage with other people and be accepted in a community (Ruckel & Hill, 2017). Young women, in particular, experience an increased need for acceptance (Rankin, Lane, Gibbons & Gerrard, 2004). Studies have discussed the importance of popularity for young girls as it offers them success and attention, giving them social rewards and positive reinforcement (Rankin *et al.*, 2004). Popularity on Instagram takes place in the form of “likes” which indicate a level of acceptance and a marker of social standing, both important pieces of a young women’s self-esteem and social acceptance (Geary & Bjorklund, 2000). The desire for interaction and attention drives the “competition for status as well as perfectionism” which can lead to eating disorders through body dissatisfaction and the “drive for thinness,” the most heavily rewarded body type (van den Berg *et al.*, 2002).

This “drive for thinness” is further reinforced by society’s emphasis on physical beauty in order to be accepted. Furthermore, because the thin ideal is unattainable for the average

Instagram user, it is necessary to overly edit photos, creating an idealized version of self (Hern, 2018). When the majority of Instagram users are editing their pictures to adhere to the thin ideal, the cycle of self-objectification is reinforced through interaction with the site and the rewards associated with adherence to these ideals. Therefore, internalization of the thin ideal and self-objectification is correlated with a user's social media patterns, as overconsumption of the thin ideal leads to an inherent belief that an individual should fit into this unattainable standard (Meir & Gray, 2014). Meir and Gray (2014) additionally determined that heavy consumption of these ideals can lead users to translate this "desire for thinness" into their lives outside of Instagram, leading to disordered body image.

Self-esteem and Thin Ideal Consumption

Eckler *et al.* (2017) used the Social Comparison Theory to determine if women were likely to evaluate their own self-worth relative to other people, finding that women who felt that they needed to lose weight spend a longer time on Facebook, focusing more on physical appearance than other participants. Social media users with pre-existing mental issues and certain conditions (i.e., appearance anxiety, high levels of competition stress, etc.) are more likely to experience low self-esteem and body image issues from engaging with social media (Buunk & Gibbons, 2001). For instance, competitive individuals are more likely to experience body image issues when they view accounts similar to themselves (Salmon, Crawford & Walters, 2008). Additionally, women with low self-esteem are likely to compare themselves with those they follow on Instagram and then determine their self-worth from their ability to compete (Buunk & Gibbons, 2001). Young women in particular are likely to feel in competition with women they see online (Thompson, et al., 2004). Unhealthy levels of competition can increase

anorexic behavior as young women put an importance on their fashionable, healthy and physical appearance (Thompson, et al., 2004).

Shimzu and Wansink (2011) found that women on a diet are increasingly likely to eat when exposed to food cues in advertisements, particularly when the commercial is about a diet food product. Additionally, studies have shown that women who already have low self-esteem may feel more inclined to eat after viewing advertisements (Shimizu & Wansink, 2011). On the contrary, many studies have found that women are likely to feel the need to diet after viewing media sources, especially if they have had weight issues before (Keery et al., 2004).

Consumption of media, therefore, correlates to internalized pressure to appear a certain way, adhering to Western beauty ideals. When women consume these ideals, they begin to compare themselves to these images, leading to low levels of self-worth and a heightened sense of body dissatisfaction. Smith et al. (2013) reported that when young women compare themselves to others, they have an increased sense of body dissatisfaction and lowered feelings of self-worth, especially if they are unable to physically appear like the people they are comparing themselves with (Thompson et al., 2007; Tiggemann & Miler, 2010).

Body Dissatisfaction and the Thin Ideal

Researchers have consistently reported that women who regularly view ultra-thin images in advertisements experience greater affective distress and body dissatisfaction than those presented with average-sized, realistic models (Levine & Murnen, 2009; Moradi & Huang, 2008; Stice et al., 1994). Despite overwhelming research, media continue to advertise the thin ideal and social media continually rewards adherence within this standard in the form of “likes” and an increase in followers/engagements. With the influx of social media, women are socially pressured into adhering into this ideal, presenting themselves inaccurately online and further

continuing the advancement of unrealistic ideals (Moradi & Huang, 2008). Mass media engagement is the top causal factor for body dissatisfaction, internalization and disordered eating behaviors (Levine & Murnen, 2009).

Body dissatisfaction is defined as a negative and subjective evaluation of the weight and shape of one's own body, contributing to abnormal eating behaviors and issues with self-esteem and body image (Polivy & Herman, 2002; Striegel-Moore & Cachelin, 2001; Tylka, 2004). Keery, van den Berg and Thompson (2004) conceptually defined body dissatisfaction as both a cognitive (beliefs, thoughts, attributions and preoccupation) and behavioral (eating disorders, etc.) issue, as low self-esteem and the internalization of the thin ideal directly contribute to disordered eating patterns (Shroff & Thompson, 2004). Keery, van den Berg and Thompson further defined cognitive body dissatisfaction as a "preoccupation with and internalization of the thin ideal, affecting self-attentional focus, investment in one's appearance and internalization of social stereotypes regarding appearance" (p. 259). Body dissatisfaction is also referred to as "body image concern" which encompasses the negative thoughts, feelings and behavioral responses to one's particular body shape or size (Thompson *et al.*, 2004). This definition contributed to the development of eating disorder questionnaires which include questions about physical eating disorders (i.e., anorexia, bulimia, etc.) and cognitively disordered relationships with food (body dissatisfaction, pre-occupation with body image, etc.) (Paxton *et al.*, 2006). Body dissatisfaction increases when the consumer is engaging with advertisements that mirror the idealized, advertised body (Eckler *et al.*, 2017; Grabe, *et al.*, 2008; Levine & Murnen, 2009; Mabe *et al.*, 2014; Smith, Hames, & Joiner 2013). The internalization of the thin ideal, therefore, directly contributes to body dissatisfaction in young women (Eckler *et al.*, 2017).

Behavioral body dissatisfaction is the physical expression of body dissatisfaction and includes self-harm and disordered eating behaviors like anorexia, bulimia, binge eating, etc. (Striegel-Moore & Cachelin, 2001). Advertisements have a significant effect on consumers, particularly those with pre-existing body image concerns (Stice *et al.*, 2001). Because advertisements reflect what society deems desirable or acceptable, women are likely to compare themselves to these images and take physical steps to make their bodies fit into the societal ideal (Stice *et al.*, 1994). Because the advertised female body is unattainable for most women, their discouragement and tenacity for success may lead them to practice disordered eating habits like anorexia, bingeing, etc., and experience low levels of self-esteem (Tiggemann & Polivy, 2010). According to the National Institute of Mental Health, over 30 million Americans have struggled with an eating disorder in their lifetime, with 3.8 percent of female teenagers ages 13 to 18 reporting they have an eating disorder (Caceres, 2020). Eating disorders are especially prevalent for young college-aged women, as eight to 17 percent of college students report they have an eating disorder, according to the American College Health Association's National College Health Assessment (Caceres, 2020). College women in particular are at risk for eating disorders as the independence, lack of monitoring/regulation and pressure to conform can increase the prevalence of anxiety, depression and body image disorders (Carceres, 2020).

Abnormal eating behaviors appear after significant cognitive body distress, including high levels of depression, anxiety and body dissatisfaction, low self-esteem and self-concepts as related to negative cognitive statuses (Frost & McKelvie, 2004). Grabe *et al.* (2008) focused on the behavioral effects of cognitive body dissatisfaction issues as the two categories overlap (i.e., feeling extremely guilty after eating). Because there is significant overlap between behavioral and cognitive body dissatisfaction, both areas are included in the survey. Behavioral body

dissatisfaction will be briefly studied in this research, however because this is a one-time questionnaire that is only studying the habits and feelings of respondents during the present moment of questioning, longitudinal correlations cannot be logically drawn.

The Dual Pathway Model: Media Consumption & Body Dissatisfaction

Stice *et al.* (1994) suggested a visual aid to further illustrate the cyclical nature of media consumption and body dissatisfaction. According to the dual pathway model (see Figure 1.), repeated exposure to the thin ideal promotes internalization which, through the social comparison theory process, directly fosters body dissatisfaction (Stice, Ziemba, Margolis & Flick, 1994). Consumption of the thin ideal further contributes to body dissatisfaction as a consumer's normative perceptions of average body dimensions of women are altered from long-term exposure (Stice *et al.*, 1994). Furthermore, this body dissatisfaction leads to elevated levels of dieting and negative affect which increases the risk of bulimic symptoms and other eating disorders (Stice *et al.*, 1994). Negative affect, or NA, is the personality trait of having negative emotions, such as poor self-concept and low self-esteem (Stice *et al.*, 1994).

Through the dual-processing model, it is evident that internalization of the thin ideal theoretically encourages the body dissatisfaction, dieting, eating disorders and negative body image. The thoughts, feelings and beliefs associated with body dissatisfaction can negatively affect a young woman's self-esteem and can lead to depression and anxiety, among other cognitive disorders (Thompson *et al.*, 2004). Media consumption is positively correlated with female body dissatisfaction, internalization of the unreasonable thin ideal and disturbed eating behaviors (Grabe *et al.*, 2008; Levine *et al.*, 2009; Meier & Gray, 2014). Media is a particularly influential medium as it presents the pressure to be thin and promotes thin-ideal internalization.

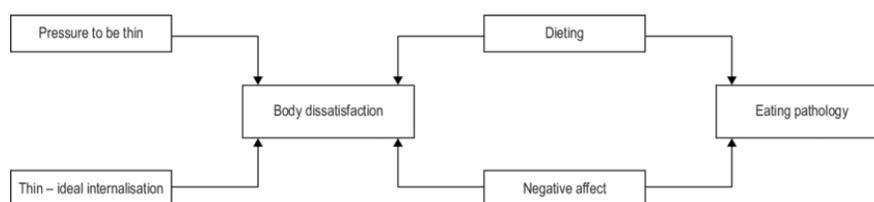


Figure 1. The dual pathway model, which displays the cyclical nature of body dissatisfaction, the societal pressures to conform and eating disorders (Stice *et al.*, 1994; reproduced without permission from the original authors).

Because these factors are interconnected, this study focuses on both disordered eating behaviors (the physical expression of thin ideal internalization) and body dissatisfaction (the internal expression of thin ideal internalization).

Tripartite Influence Model

The social comparison theory is used extensively in media research, particularly in studies that deal with body image and eating disorders. The social comparison theory states that consumers determine their internal (personal) and external (social) worth based on their perception of others, comparing themselves to the personality styles and physical attributes presented in media (Puvia & Vaes, 2013; Stormer & Thompson, 1996). After extensive consumption of these images, individuals may attempt to alter their physical body and personality traits in both healthy and unhealthy ways (Myers & Crowther, 2009). People with high levels of social comparison are known to experience low levels of self-esteem and high levels of body dissatisfaction and anxiety (Myers & Crowther, 2009). Furthermore, consumers with high comparison orientation are likely to engage in upward social comparison, which leads to low self-esteem (Tiggemann & Polivy, 2010). Frequent consumption of these ideals negatively affects mood and is correlated with high levels of body dissatisfaction and low levels of self-perception of physical attractiveness (Groesz *et al.*, 2002).

Within the social comparison theory is the Tripartite Influence Model of body dissatisfaction and eating disorders (Keery *et al.*, 2004). This essentially states that consumers discover a sense of self and determine their place in society through consumption of and comparison with three sources: family, peers and the media (Shroff & Thompson, 2006). The Tripartite Influence Model elaborates on the social comparison theory, stating that consumers are likely to compare themselves to the family in which they are raised, the peers they choose to associate with, and the portrayals in media that are highly praised and/or recognized as being desirable (Keery *et al.*, 2004).

The first tier of the Tripartite Influence Model involves family/parental influence. Family is very important in a young woman's development, and this tier of influence is additionally important in this study as over 70 percent of people between the ages of 13 and 17 use Instagram regularly (West, 2019). Middle school, in particular, is a sensitive time for young women, and those that received parental pressure to be thin were likely to have eating disorders and body dissatisfaction later in life (Tigemann & Polivy, 2010). Additionally, children that are teased by their family about their weight are likely to develop eating disorders and disordered relationships with their body (Pike & Rodin, 1991). Maternal pressure is a significant predictor of eating disorders, and researchers have found that young women are likely to model behaviors of other women within the immediate family (Coomber & King, 2008) Sisters are the most influential familial contributors to body image as they are the closest in age and body type to one another (Coomber & King, 2008). In a longitudinal effects study, Stice and Bearman (2001) found that when media messages echo the pressure to be thin from a person's proximal social environment (friends, family, etc.), consumers are more likely to internalize media messages about the importance of thinness.

The second tier of the Tripartite Influence Model is peer/friend influence. Numerous studies have confirmed the effects of peer influence on eating and body image. Paxton et al.(1999) interviewed high school girls and confirmed that many those with body image issues were likely teased by their friends about their weight and shape, confirming the second component of the Tripartite Influence Model. To further support this, other researchers found that women who were teased about their weight as young adults were likely to develop body dissatisfaction later in life (Stormer & Thompson, 1996; Thompson, Cattarin, Fowler, & Fisher, 1995). The pressure from peers to remain thin was just as influential as teasing, as Stice, Ziemba, Margolis and Flick (1996) found that individuals with clinical bulimia experienced extreme pressure from peers to remain thin. Previous studies also note that while creating and maintaining peer relationships is important for a child's well-being (Merten, 2004), it may also contribute to their stress and sense of competitiveness, especially between members of the same sex (Byrne, Davenport & Mazanov, 2007).

Instagram allows users to engage with their peers/friends and family while they are also viewing images of celebrities and models. This activity greatly increases the likelihood of women to create unrealistic expectations for their own bodies. Stress from female competition is a leading cause of eating disorders like anorexia, and sites like Instagram foster this sense of competition (Faer, Hendricks, Abed, & Figueredo, 2005). Additionally, when young people consume large amounts of media, they may begin to consider social media as their social circle, being influenced from the people they interact with and view on sites like Instagram (Tiggemann & Slater, 2014). When they confuse these people (i.e., models, influencers, acquaintances, etc.) with their immediate peer group, women may have a likelihood to experience low self-esteem as

they cannot compete to people outside of their income level and social status (Maltby, Houran & McCutcheon, 2003).

The third and final component of the Tripartite Influence Model is media influence. Media effects are far-reaching and evolving as media themselves are changing. Studies show that women are likely to compare themselves to the images they view on social media sites, especially when the images are of celebrities, Instagram-famous models, and their friends and peers (Hargreaves & Tiggemann, 2003). Stice et al. (1994) revolutionized the advertising community's knowledge of media exposure effects by creating a methodologically based media exposure scale that evaluated the role of media exposure on eating disorders, also testing the mediating role of gender role endorsement, ideal-body stereotype internalization and body satisfaction, reporting that media exposure had a direct effect on eating disorder symptoms and gender role endorsement. Furthermore, through upward social comparison, the consumption of the ultra-slim, female body, is unhealthy as it contributes to body dissatisfaction and eating disorders among young women overtime (Groesz, et al., 2002; Levine et al., 1996; Stice, Spangler & Stewart, 2001; Thompson et al., 2004). When the thin ideal beauty standard is reinforced through socio-cultural mechanisms like media, young women may internalize this as an image they need to maintain (Yamamiya et al., 2008).

Maintaining this body image can result in eating disorders and low levels of self-esteem. The current thesis examines the relationship between Instagram usage and body dissatisfaction, both cognitively and behaviorally by asking participants how often they experience and engage in disordered feelings and behaviors. Literature in this area and the proposed theoretical framework suggest that body dissatisfaction and social media usage are related, indicating that people with low self-esteem are likely to engage with Instagram, possibly in an unhealthy

manner. Also, Instagram usage is investigated in terms of behavior (i.e. liking, commenting), access frequency, and relationships based on the Tripartite Influence Model (i.e. media, friends).

Based on the literature reviewed, the following hypotheses are posed:

R1: To what extent do Instagram usages (i.e., relationships, behavior tendencies, and access) make differences on cognitive eating disorders amongst young adults, respectively.

R2: To what extent do Instagram usages (i.e., relationships, behavior tendencies, and access) make differences on disordered eating behavior amongst young adults.

R3: To what extent do Instagram usages (i.e., relationships, behavior tendencies, and access) make differences on body dissatisfaction amongst young adults.

R4: To what extent do Instagram usages (i.e., relationships, behavior tendencies, and access) make differences on physical appearance competition amongst young adults.

R5: To what extent do Instagram usages (i.e., relationships, behavior tendencies, and access) make differences on competition stress amongst young adults.

Methods

Participants

In order to comprehensively study body dissatisfaction and Instagram usage, undergraduate and graduate students from a major state university in the southern United States were recruited in courses related to journalism, advertising and mass media studies during the 2019 Spring semester. College-aged women in particular were targeted to perform this study as a major source of competition among this group stems from the societal expectations for them to be physically attractive, fashionable and sexually desirable in order to “fit in” or achieve high social status (Walters & Crawford, 1994; de Bruyn & van den Boom, 2005). The total obtained sample was 187 people, the only requirements were that respondents needed to be over the age

of 18 with an Instagram account. Over 80 percent of respondents were college-aged, being between 19 and 24 ($n = 163$, 87.6%). Most of the respondents were female ($n = 164$, 87.7%) with 22 men (11.8%) and one non-binary individual (0.01%). Additionally, 164 of the respondents were white/Caucasian (87.77%), with 10 Hispanic respondents (0.05%), six “other” categories (3.2%), four African American respondents (2.1%), two Asian (1.1%), and one Native American (0.5%).

Procedures

To examine the relationship between body dissatisfaction and Instagram usage, three major questionnaires were performed to determine the level of disordered eating behaviors, body dissatisfaction and a user’s regular behaviors on Instagram, including the average time spent on the site, the typical levels of engagement and which accounts the user views/interacts with.

Independent Variables

In this thesis, “Instagram usage” was the umbrella term to define a user’s Instagram relationships, behavioral tendencies, and access frequency. Since each part is a summation of three or four separate question sections, the higher number calculated was congruent with more connections, including more relationships, more behaviors and a higher level of access frequency.

Instagram Access Frequency. Instagram access frequency measures the level of user connection with the platform. Respondents were asked how often they accessed Instagram: 1) several times a day, 2) once a day, 3) once every few days, 4) once a week, 5) once every few weeks, 6) less often than every few weeks, or 7) never. The clear ordering of the variables means that respondents who access the app several times a day received a higher score in this section than those who never accessed the application. The results of this section distinguished heavier

users from those who infrequently use the platform. Over 82 percent of respondents ($n = 155$) accessed Instagram several times a day, with only six respondents (3.2%) saying they never access the app. It is also interesting to note that the second highest category was “once a day,” with 10 percent of respondents ($n=18$) reporting they only use the application once daily.

Instagram Relationships. The relationship section of the questionnaire asked respondents to identify with whom they engage with on Instagram: 1) friends, 2) family, 3) celebrities, 4) brands, 5) influencers, and/or 6) others. Respondents answered “yes” if they engaged with these types of accounts and “no” if they did not engage with a particular category. Respondents were given the option to select “other” and elaborate on the other accounts they regularly access. All “yes” answers were coded as 1 and “no” answers were coded as 0 to determine how many different relationships the respondent maintained and which groups of people they frequently engage with on the site.

The Instagram relationship data had a mean of 4.06 ($SD = 1.46$), meaning most people engage with nearly four different groups of people (friends, family, brands, celebrities and/or influencers). This means the collected data is representative of most relationship categories.

Instagram Behaviors. Finally, respondents were asked to report on what they regularly do when they access Instagram. They were asked whether or not they engaged in the following behaviors: 1) liking, 2) commenting, 3) posting or 4) scrolling on either their home page or the discover page (a “recommended” page of accounts generated from the user’s previous likes, comments, searches and locations). Respondents were also given the option to indicate and elaborate on other activities they participate in. This data was nominal, meaning the final summation of values signified that a high score on this section meant that the respondent was engaging in a significantly high number of behaviors. Respondents answered “yes” if they

participated in a particular behavior and “no” if they did not. All “yes” responses were coded as 1 and all “no” responses were coded as 0. The higher the number, the higher number of activities the respondent participated in.

The mean for the Instagram behavior data set was 3.91 ($SD=1.36$), meaning the average respondent uses Instagram to “like” photos, comment on photos, post photos and explore their home page (the people they have chosen to follow) and the search page (curated based on the accounts they’ve interacted with).

Dependent Variables

To determine if respondents have an unhealthy relationship with food and/or their self-image, a short questionnaire was presented at the beginning of the study. The academically and professionally acclaimed Eating Disorder Examination Questionnaire (EDE-Q) is a lengthy questionnaire designed to diagnose and monitor eating disorders (Fairburn & Beglin, 1994). The test has maintained statistical significance since its implication in 1994, however the test is regularly updated and the 17th edition was published in 2014. In 2016, the U.S. National Library of Medicine published a statistically sound, shortened version of the EDE-Q, the EDE-QS, with the ‘S’ representing the adjusted length (Gideon et al., 2016). The shortened questionnaire passed the Rasch analysis test, a method used to determine the appropriateness and value of each question (Bond & Fox, 2010; Tennant & Conaghan, 2007).

Cognitive Eating Disorders. The first portion of this test sought to determine a user’s cognitive relationship with food. Respondents were asked how often (if ever), they experienced five food-related cognitive issues in the past two weeks: 1) compulsive thoughts about food, eating or calories that caused disrupted their ability to focus on daily tasks (EC1), 2) consuming thoughts of personal weight/shape that make the respondent unable to concentrate on things such

as working, following a conversation or reading (EC2), 3) a definite fear of gaining weight (EC3), 4) a strong desire to lose weight (EC4), and 5) a loss of control while eating during the past two weeks (EC5). Respondents who experienced these issues were asked to state how often this affected them, answering if they: did not experience the issue (0) or experienced the issue one to two days (1-2) of the week, three to five days (3-5) of the week, or six to seven (6-7) times during the week. A reliability analysis determined these five questions were similar enough to be considered next to one another (Cronbachalpha = .852). The mean response of this section was 2.094 (SD = .32), meaning that respondents experienced some of the cognitive eating problems at least a couple times during the week.

EC1. Most survey participants did not regularly experience a difficulty concentrating due to thoughts of food (59.9% v. 40.5 %). However, 16 respondents (0.08%) said they experienced difficulty concentrating on regular tasks six to seven days a week. Obsessing over food, eating and/or calories is indicative of a cognitive eating disorder, meaning some respondents have a clinically unhealthy relationship with food. The mean for this question was 1.68, meaning on average, users did not commonly experience a difficulty concentrating due to thoughts about food and calories.

EC2. Almost half of the respondents did not feel consumed by thoughts of their weight/shape at all during the week (n = 84, 48.1%). However, over 10 percent of respondents reported that they had difficulty concentrating for at least six days of the week (n = 24, 12.8%), meaning that they were so consumed by thoughts of their weight/shape they could not participate in daily conversations/activities. This consuming obsession with personal weight/shape is indicative of a negative relationship with one's weight/shape, which is categorized as body dysmorphia, a symptom of cognitive eating disorders and a contributing factor to negative body

image. To determine the average user response in this section, a mean score was calculated. This question had a mean response of 1.93, meaning most respondents felt consumed by thoughts of their weight/shape a couple times a week.

EC3. More than a quarter of respondents said they did not experience a significant fear of gaining weight (n = 52, 27%); however, 30 percent reported they experienced this fear once or twice a week (n = 55) and 25 percent responded that they feared gaining weight almost every day during the last week (n = 47). Of the 187 respondents, 135 experienced a real fear of gaining weight at least once a week (72.2%). This data indicates that over 70 percent of respondents have a negative relationship with food, as they are seriously concerned with gaining weight. The average response for this question was 2.40, meaning that respondents were afraid of gaining weight more than twice a week.

EC4. The majority of survey respondents said they have a strong desire to lose weight at least three days of the week (n = 105, 56.2%). This data indicates that respondents feel a strong desire to lose weight most of the week. For this question, the mean result was 2.75, meaning most respondents felt the desire to lose weight roughly three times a week.

EC5. The majority of respondents did not feel they lost control while eating in the past week (n = 122, 65.2 percent). This data indicates that most respondents did not feel they suffer with this particular cognitive eating disorder. The mean of responses was 1.71, meaning that on average, respondents did not experience this loss of control more than twice a week.

Behavioral/physical Eating Disorders. Physical eating disorders are usually referred to as “disordered eating behaviors,” because respondents have a behavioral issue that can be tied to clinical eating disorders. To determine the extent of disordered eating behavior amongst the participants, respondents were asked how often (if ever), they engaged in disordered eating

behaviors in the past two weeks, responding zero (0) if they did not participate in the activity. Respondents who did participate in the behavior were asked how often they participated, answering either: one to two days (1-2) of the week, three to five days (3-5) of the week, or six to seven (6-7) times during the week. The five behavioral eating disorder questions were posed: 1) how often did the respondent deliberately tried to limit the amount of food they were eating to influence their weight/shape (EB1), 2) if (and how often) respondents went for long periods of time (e.g. eight or more waking hours) without eating anything in order to influence their weight/shape (EB2), how often the respondent exercised in a driven/compulsive way as a means of controlling their weight/shape/body fat or to burn off calories (EB3), how often they consumed unusually large amounts of food in one sitting (EB4) and if how often they tried to control their weight/shape by making themselves sick (vomiting) or taking laxatives (EB5). These questions were statistically similar, receiving an acceptable alpha on a 5-point reliability scale ($n = .695$, $\alpha = .71$).

EB1. For the first eating behavior question, respondents were asked how often they deliberately tried to limit the amount of food they consumed to influence their weight or shape (regardless of whether or not they succeeded in changing their weight/shape). This question is directly related to anorexia, as restrictive behaviors are symptoms of anorexia. Most participants said they purposefully restrained themselves at least once during the last week ($n = 119$, 63.6% v. $n = 68$, 36.4%). Over 25 percent of respondents reported they purposefully restricted their food consumption six or seven days of the week, meaning a quarter of respondents engaged in dangerous eating disordered activity daily. Purposefully restricting food intake is indicative of anorexia or similar behavioral eating disorders. The mean response of this section was 2.27,

meaning on average respondents purposefully constrained their caloric intake a few times a week.

EB2. The second eating behavior question asked the respondent how often they had purposefully avoided food for long periods of time (e.g., 8 or more waking hours). For this question, the majority of participants responded that they did not engage in this restrictive behavior during the week in question ($n = 126, 67.4\%$ v. $n = 61, 32.6\%$). Less than 10 percent of respondents reported they significantly restricted their eating at least six days of the last week ($n = 14, 7.5\%$). This indicates that most respondents do not regularly engage in this disordered eating behavior. The mean result of this question was 1.56, meaning that respondents did not, on average, participate in this behavior more than twice a week.

EB3. The third eating behavior question addressed purging, a behavior associated with bulimia nervosa (bingeing and self-induced purging). Over half of the respondents reported they participated in this behavior at least once a week ($n = 97, 51.9\%$ v. $n=90, 48.1\%$). Of the 187 people questioned, 27 purged or took laxatives to lose weight almost every, or every day for the last week. This indicates a significant behavioral issue with food. The mean response for this question was 1.94.

EB4. The next question addressed orthorexia; an eating disorder categorized by excessive exercise as a means to lose weight. The majority of the respondents did not report compulsively exercising to lose weight during the week ($n = 106, 56.7\%$). However, it is important to note that 25 respondents said they participated in this behavior almost daily (6-7 days), indicating a structured negative relationship with food. The mean response of this question was 1.48.

EB5. Finally, respondents were asked how often they ate an unusually large amount of food or lost control while eating. This behavior is associated with bulimia, as people are likely to

purge after eating unhealthily large amounts of food (binge eating). Over 80 percent of respondents did not lose control or eat unusually large amounts of food ($n=165$, 88.2%). The mean response of this question was 1.20, meaning respondents, on average, did not experience this loss of control more than once a week.

Body Dissatisfaction. Body dissatisfaction was addressed in two questions, asking how significantly the respondent experienced each in the last week, ranging from “not at all” to “markedly.” The questions asked how regularly the respondent’s weight/shape influenced their self-esteem (BD1) and how dissatisfied they have been with their weight/shape in the past week (BD2). The body dissatisfaction questions were combined into one data file, named “body dissatisfaction.” They were then tested for reliability to determine if the questions were similar enough to one another and if they produced similar results, meaning they could acceptably be grouped together to determine body dissatisfaction levels. This two-item scale was run through SPSS reliability tests and received an alpha of .86 ($M = 3.22$, $SD = 1.27$), establishing the scale as reliable. The mean response of both answers indicated that most respondents moderately experienced dissatisfaction because of their weight. ($M=3.4$; 3.36, respectively).

PACS-3 and SATAQ-3. The Physical Appearance Comparison Scale (PACS-3) measures the likelihood that a respondent compares themselves to others in real life. The PACS-3 focuses particularly on how individuals compare themselves based on their weight, shape and overall physical appearance. This scale in particular captures aspects of physical appearance directly related to Western appearance ideals (Thompson et al., 2007). PACS-3 was developed from the previously popular Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3) developed by Thompson et al. (2003). The questions included in this study are from both scales as the overlap further confirms each question’s relevance. To determine a respondent’s physical

comparison likelihood, they were asked to read ten questions and consider how much they related to each. This was measured using a 5-point Likert scale (0-strongly disagree, 5-strongly agree).

The first question asked if consumers compared their physical appearance (clothing, weight, body figure and physical attractiveness) to the physical appearances of their peers. Over half of the respondents said they compare their overall appearance to other people in social events/situations (n = 135; 70.6%), with most users agreeing that they compare their figure, attractiveness and clothing to those around them (n = 135, 70.6% ; n = 100, 53.5%; n = 134, 71.7%, respectively). Roughly half of the respondents agreed that their peers are an important source of information about fashion and “being attractive,” (n = 99; 53%) but less than half of respondents reported they want to or are trying to look like their peers (n = 83; 44.4%; n=78, 41.8%), and even less said they feel pressure to look similar to their peers (n = 75; 40.1%). Most respondents disagreed with the idea that comparing your figure to the figure of others is the best way to determine one’s own level of fitness (n = 129; 69%). Although each question yielded different results, the reliability of these questions was proven significant on a 10-point scale ($\alpha=.90$).

CSPA. To further determine if respondents have a high level of social comparison orientation without the direct influence of advertisements, a personality test was created from the Female Competition Stress Test, developed and tested by Salmon, Crawford and Walters in 2008. To this day, the test retains its influence in the academic community as it was comprehensively tested on women of all ages, primarily focusing on undergraduate students from a variety of schools. This study in particular is concerned with how female-competition stress may increase anorexic type behavior, supported by Salmon, Crawford and Walters’s study

that created the Female Competition Stress Test to evaluate the appearance of same-sex competition amongst women.

The questions included in this study were selected based on their relevance to female-female competition on social media. To test a respondent's level of competition-related stress, respondents were asked to determine their behaviors and feelings using a 5-point Likert scale (1-completely unlike me, 5-completely like me). The questions addressed a user's feelings about the people behind the accounts they follow on Instagram. The first question asks if the user feels intimidated by accounts that seem to "have it all" or if they are anxious about their physical appearance or find it difficult to look like people they follow on Instagram. The results of this section were averaged together, with higher results indicating a higher level of competition stress. The final question, however, asked about the inverse of the other questions, asking if respondents are happy with how they appear on Instagram. This question was adjusted in the SPSS data form to reflect the other questions in this section. The questions are relevant to one another, with an alpha of .83 on a 5-point reliability scale, with a mean of 3.29 and a standard deviation of .95.

Most respondents said they feel anxious about (56.7%) and intimidated by (59.9%) their peers on Instagram, but not less attractive (38% v. 41.2%). Less than half of respondents reported they find it difficult to look like those they follow (45.5%), perhaps because they don't feel they are less attractive. Interestingly, users are typically happy with how they appear on Instagram (n = 80; 42.8%), and over a quarter of respondents reported they feel completely neutral about their Instagram persona (n = 56; 29.9%).

Results

Instagram Usage and Cognitive Eating Disorders

The first hypothesis sought to find the group differences among different Instagram users on their cognitive eating disorder. First, among different types of Instagram users in terms of their access frequency, there were seven options to self-rate the amount a user accesses the application, ranging from “I access Instagram several times a day” to “I never access the application.” A t-test was conducted, and results did not show significant differences among the seven categories, meaning users who access Instagram several times a day are just as likely to have cognitive eating disorders as people who do not access the application. However, the survey results indicated that the majority of people access at least once a day ($n = 171$). To determine if there is a relationship between heavy users and non-users, Instagram access frequency was re-categorized as heavy access (users who access the app “several times a day” or “at least once a day”) and light access (users who reported they “never” or “rarely” access Instagram). A series of independent sample t-tests was run and determined there is a significant difference on cognitive eating disorders between heavy and light Instagram users ($M = 2.13$ v. $M = 1.73$). Heavy users had a higher mean than light users. This confirms that access frequency is positively related to cognitive eating disorders, meaning that heavy users have higher levels of cognitive eating disorders ($p = .07$, $t = 3.32$).

Secondly, relationships on Instagram were also analyzed to determine if there is a relationship with cognitive eating disorders. A series of t-tests were conducted, and the results showed that there were significant differences on cognitive eating disorders between respondents who follow friends ($t = -2.81$, $p = .025$, $M = 2.12$, $SD = .86$) and respondents who do not follow friends ($M = 1.54$, $SD = .51$). People who interact with friends are more likely to have higher

cognitive eating disorder symptoms than those who do not follow friends. The same was true for people who follow celebrities ($t = -2.62, p = .01, M = 2.18, SD = .01$) and those who do not follow celebrities ($M = 1.86, SD = .69$). There was also a significant difference on cognitive eating disorders between users that follow brands ($t = -2.17, p = .032, M = 2.17, SD = .88$) and those who do not follow brands ($M = 1.80, SD = .76$). Finally, there was a significant difference between users who followed influencers ($t = -1.78, p = .077, M = 1.94, SD = .81$) and those who do not follow influencers ($M = 2.17, SD = .87$). In other words, respondents who follow friends, celebrities, brands, and influencers are more likely to have higher cognitive eating disorder symptoms compared to those who do not follow those categories.

There were no significant relationship differences between family engagement on Instagram and cognitive eating disorders. To further determine what category of relationship was most related to cognitive eating disorders, the data was grouped into friends, family and media relationships. While most users reported they engage with family ($n = 162, 86.6\%$) and friends ($n = 180, 96.2\%$), a surprising number of respondents reported they do not engage with influencers ($n = 63, 33.7\%$), brands ($n = 53, 28.3\%$) and/or celebrities ($n = 51, 27.2\%$). To determine the significance of close, interpersonal relationships, the categories were grouped into private and media relationships. The media relationships included celebrities, influencers and brands, while the private group was composed of friends and family. Researchers ran an independent t-test to determine if either of the groups are related to cognitive eating disorders. There was a significant difference between users who participate in public relationships ($t = -1.8, p = .051, M = 2.17, SD = .86$) and those who do not ($M = 1.72, SD = .65$). There was not a significant difference between users who participate in private relationships and those who do not. However, only 18 respondents reported they do not engage with either friends or family.

Lastly, to determine if there is significant relationship difference between each Instagram behavior, a series of t-tests was conducted and the results showed that there was a significant difference on behavioral eating disorders between respondents who engage in the “other” category of activities ($t = 1.98, p = .066, M = 1.7, SD = .77$) and respondents who do not engage with the “other” category of Instagram behaviors ($M = 2.13, SD = .86$). In other words, respondents who interact with the “other” category had lower cognitive eating disorder symptoms compared to those who do not engage in “other” behaviors. The “other” behaviors include “watching stories/IGTV,” “direct messaging,” and “searching.”

Further, to see the relationships among the “behavior intensity” and “relationship intensity” categories and cognitive eating behavior disorders, a Pearson’s correlation was conducted. The result showed that relationship intensity positively relates to cognitive eating disorders ($r = .152, p = .038$). In other words, when a person has a large amount of Instagram connections/relationships (i.e., following and followers) on Instagram, they are more likely to have higher cognitive eating behavior symptoms. This means that the more people someone is following, the more likely they are to have a cognitive eating disorder.

Instagram Usage and Behavioral Eating Disorders

The second hypothesis sought to see significant differences between Instagram usage and behavioral eating disorders. The only significant difference was between those who interacted with “others” on Instagram ($p = .01, t = 2.815, M=1.58, SD=.57$), and those who did not ($M=1.70, SD=.64$). In other words, respondents who interact with others had lower behavior disorder symptoms compared to those who did not interact with the “other” category. The “other” pages included: animals, artists, “dank memes and fandom posts,” fitness/food, humor accounts, local businesses, workout pages and sports pages. Further, to see the relationship

between “behavior intensity” and “relationship intensity” and behavioral eating behavior, a Pearson’s correlation test was conducted. There were no significant correlations among them.

Instagram Usage and Body Dissatisfaction

The relationship between Instagram usage and body dissatisfaction was inconclusive, with insignificant results. Therefore, the third hypothesis was not supported.

Instagram Usage and PACS

The fourth hypothesis sought to see how Instagram usage among respondents affects a user’s physical appearance comparison. For the “access frequency,” a t-test showed that there was a significant difference on appearance comparison ($t= 2.01$, $p= .46$, Heavy users: $M= 3.31$, $SD= .06$, Light users: $M= 2.88$, $SD= 1.02$). In other words, heavy users are more likely to compare their appearance with others, compared to light users. These results confirm the research that states people who consume images of the ideal body type are likely to compare themselves to these images, and feel disappointed when they inevitably do not measure up to these unattainable standards.

Secondly, Instagram relationships were studied to test if there is a correlation with physical appearance comparisons. There were significant differences on physical appearance comparison results between respondents who follow friends and respondents who do not follow friends ($t= -1.89$, $p= .06$; following friends: $M= 3.30$, $SD= .82$; not following friends: $M= 2.70$, $SD= .81$). Additionally, there was a significant relationship between physical appearance comparisons and users who engaged with the “other” category ($t= 2.14$, $p= .033$, $M= 2.92$, $SD= .89$) compared to those who did not follow anyone in the “other” category ($M= 3.31$, $SD= .80$). In other words, respondents who follow their friends are more likely to compare their physical appearance with others compared to those who do not follow friends on Instagram. Thus, people

who are following their friends are comparing themselves to those friends, representing a horizontal comparison. When examining the relationship types on Instagram, it is interesting to see that when people are following the “other” category, they don’t compare themselves, compared to those who do not follow others.

Lastly, for the Instagram behavior, a series of t-tests was conducted and the results showed that there were significant differences on physical appearance comparison between respondents who like postings and respondents who do not like postings ($t = -1.95$, $p = .064$, liking $M = 3.31$, $SD = .84$, not liking $M = 2.96$, $SD = .69$), respondents who comment and respondents who do not comment ($t = -2.70$, $p = .007$, commenting $M = 3.40$, $SD = .80$, not commenting $M = 3.07$, $SD = .84$), respondents who post and respondents who do not post ($t = -2.26$, $p = .028$, posting $M = 3.34$, $SD = .82$, not posting $M = 3.01$, $SD = .82$). In other words, respondents who like, comment, and post are likely to compare their physical appearance with others compared to those who do not like, comment, and post on Instagram.

Further, to see the relationships among the “behavior intensity” and “relationship intensity” groups, a Pearson’s correlation test was conducted. The results showed that behavior intensity is positively related to physical appearance comparison ($r = .16$, $p = .024$). In other words, the more a person is active on Instagram, the more they are likely to compare their physical appearance to others. This is interesting to note as people who are actively using and engaging with Instagram are more at risk to acquire these negative behaviors.

Instagram Usage and CPSA

The last hypothesis sought to see how Instagram usage relates to competition stress. For access frequency, there was no significant difference between heavy or light users. Secondly, for relationships on Instagram among the groups, there was a significant difference on competition

stress between respondents who follow “others” and respondents who do not follow others ($t = 1.87$, $p = .064$, following others $M = 2.82$, $SD = .96$, not following others $M = 3.19$, $SD = .88$). In other words, respondents who follow others are less likely to have competition stress compared to those who do not follow the “other” category. Lastly, for the Instagram behavior category, there were no significant differences between the different types of Instagram usage. Further, to see if there is a relationship between “behavior intensity” levels and “relationship intensity levels,” a Pearson’s correlation test was conducted. There were no significant correlations among them.

Discussion

Mass media are influential mediums from which people learn acceptable behaviors and judge how they conform or do not conform to societal standards (Comstock & Scharrer, 2007; Harris, 2013). Many studies have discovered the correlation between media and body dissatisfaction among young women, indicating that female consumers are negatively influenced by images of other women, particularly those that represent the idealized body (e.g., Eckler et al., 2014; Grabe et al., 2008; Levine & Murnen, 2009; Mabe et al., 2014; Smith et al., 2013). This thesis examined significant relationships between components of poor body image and Instagram usage, including access frequency, relationships and behaviors performed on the application. It should be noted that the results of this study may apply only to a small percentage of people as the physical inclination of some people to have low self-esteem was not studied in this particular thesis. The results, therefore, should be taken at surface level and not used to diagnose or draw unrealistic conclusions about an entire population. Behaviors are affected by a multitude of factors, and psychologists spend their entire careers looking to determine exactly what contributes to eating disorders. Therefore, this study should not be taken for more than

face-value, as the author is not an academic studying the psychology or physiology of individuals with eating disorders. The results and conclusions may be drawn broadly.

Instagram Usage and Cognitive Eating Disorders

There were few relationships between Instagram usage and cognitive eating disorders. Heavy Instagram users have higher rates of cognitive eating disorders, supporting a portion of the hypothesis. The literature review predicted that people who spend a significant amount of time on the internet will develop an unhealthy body image/self-esteem. As discussed in the literature review, the repetitive consumption of unrealistic models and body ideals can contribute to cognitive eating disorders and a distorted view of self.

There was a significant relationship between public relationships (i.e.,) and cognitive eating disorders. Friends and family were not nearly as important to cognitive eating disorders as hypothesized. The Tripartite Influence Model, developed from the social comparison theory, was deemed extremely important in this study, however the only influential group for cognitive eating disorders was public/media relationships, not friends or family. This study did not focus heavily on family relationships, as more research into family structure and dynamics would need to be included in the survey. There were no significant differences between family engagement and other types of engagement on any of the dependent variables, so it can be assumed that families are not as relevant as media and friend/peer influence. Perhaps this is due to the average age of the respondents, and the time they have spent living apart from their families during their undergraduate careers. Further studies should be conducted to determine if education or time away from family is inversely correlated with familial influence. Cognitive eating disorders did not have any significant relationships with the “private” relationship category, meaning there was no relationship between cognitive eating disorders and family or friend relationships. When

consumers compare themselves to people they deem as equal, or slightly inferior to themselves, it is predicted that they will have positive results, experiencing high levels of self-esteem, etc. (Groesz *et al.*, 2002). Horizontal comparison may actually be positive, although there is not enough research in this study to definitively make that connection, further research should be performed.

As hypothesized from the literature, upward comparison is unhealthy for media consumers, especially since it is impossible to look like Instagram celebrities and influencers. As predicted, upward comparison is harmful to consumers. There was a significant difference between media relationships and cognitive eating disorders, meaning that higher levels of media consumption are associated with higher levels of cognitive eating disorders.

The first hypothesis was partially supported by the data collected from the survey. There was a significant relationship between some Instagram usage categories and cognitive eating disorders. Cognitive eating disorders indicate a negative relationship with food, but they do not necessarily indicate a physical eating disorder. However, over 70 percent of respondents indicated they experienced a definite fear of gaining weight at least three times a week, and nearly 60 percent of respondents said they regularly had a strong desire to lose weight. These results indicate a negative relationship with food. Through the dual pathway model, it is apparent that this negative relationship with food can lead to eating disorders and body dissatisfaction. It is reasonable to conclude that Instagram usage (relationships, access frequency and behaviors) contributes to cognitive eating disorders and compulsive thoughts about weight/shape. Because Instagram was created in 2010, it is reasonable to assume that this data group was the first generation to use the social media site as pre-teens. Further studies should be performed to determine the levels of cognitive eating disorders amongst younger generations who grew into

adulthood using the site. As previously stated, over 70 percent of young people (under the age of 18) use Instagram, indicating its prevalence in their lives.

Instagram Usage and Behavioral Eating Disorders

The second hypothesis was not supported by the data. The second hypothesis sought to determine if there was a positive correlation between physical eating disorders and Instagram usage. There was not enough evidence to support a significant relationship between Instagram usage and physical eating disorders. The only significant category was “other” and there wasn’t enough data to make any significant conclusions about this data set as some users answered “none” or “not applicable.” Through the dual pathway model, however, physical eating disorders follow cognitive disorders, which were significantly related to Instagram usage. It is interesting to note that many respondents engaged in disordered eating behaviors, although officially, only nine percent of American women are affected by eating disorders (Eating Disorders Coalition, 2019). Only 187 people were studied for this project, and over half of them reported purging and purposely restricting their food intake at least once a week.

Instagram Usage and Body Dissatisfaction

The third hypothesis was not supported by the data collected. This hypothesis addressed Instagram usage and body dissatisfaction. Over 20 percent of respondents reported their weight/shape influences how they judge themselves as a person (23.5%; n=44). Additionally, 25 percent of respondents reported they are very dissatisfied with their weight/shape (n=47). Only 23 people, of the 187 studied, reported they are satisfied with their bodies. This is an absurdly low number, representing less than 15 percent of the people included in the study (12.3%). The results did not indicate that feelings of body dissatisfaction are positively related to Instagram usage. Because so many people experience this issue, however, more research needs to be done

to understand why so many people feel so poorly about their bodies. It is unknown why Instagram usage is not correlated with body dissatisfaction; however, all the cognitive eating disorder results were positively correlated with the two body dissatisfaction questions, meaning that people who experience cognitive eating disorders also experience body dissatisfaction.

Instagram Usage and PACS

There is a significant relationship between PACS and Instagram access frequency, indicating that time spent on Instagram is correlated with a user's comparison likelihood. It can be assumed that regular consumption of Instagram images can contribute to a person's comparison tendencies, perhaps feeling inadequate after consuming images of celebrities and models.

The fourth hypothesis was supported by the data. This hypothesis sought to determine if there is a significant relationship between Instagram usage and physical appearance comparison orientation. This hypothesis was supported by the data, indicating that Instagram users regularly compare themselves to other people. While this behavior can positively affect a user, more often than not, it increases levels of appearance anxiety. As discussed, when a user compares themselves to the people they see on Instagram, they are not comparing themselves to realistic bodies. This can create a level of disconnect in the minds of consumers and lead to low levels of self-esteem. Making a comparison between your everyday physical appearance and the presentation of a celebrity/influencer on Instagram is detrimental, through the social learning theory. Instagram contains staged photographs and unrealistic body ideals, with some users receiving financial compensation to look a certain way. Comparing oneself to media images is indicative of an issue, particularly an issue defining and identifying reality outside of Instagram.

There were significant differences between users who comment on Instagram and those who do not. Likewise, there was a significant difference between posting photos on Instagram and not posting photos. These behaviors are indicative of “active participation,” which can be both helpful and detrimental to a user’s view of themselves. As discussed, some researchers believe active social media engagement positively benefits users while others believe that through the reward system, Instagram may be detrimental to both active and passive users. Passive behaviors include scrolling on the home page and interacting with the search page, whereas active behaviors are commenting, posting and liking photos. In this study, there were no significant relationships between passive behaviors and any of the dependent variables. Passive behaviors then can be deemed uninfluential and uncorrelated with the negative self-esteem issues that are researched effectively in this study.

Active participation, however, showed a significant relationship with PACS. The more a user posts pictures on Instagram, the more likely they are to compare themselves to other users. Perhaps this is because they view themselves in competition for “likes” or engagement, particularly because Instagram’s algorithm rewards accounts who receive attention by giving them priority on followers’ home pages. It will be interesting to see how this algorithm changes, as Instagram announced in Fall 2019 that users may be unable to view the number of likes on each other’s posts. Further research should be performed after this change takes place internationally. For now, it can be determined that active engagement on Instagram is positively correlated with a user’s level of comparison with other users.

For the PACS scale, there was a significant difference between users who comment on Instagram photos and those who do not. It is interesting to note that this study did not ask what types of comments users leave on photos. Further research could determine if users comment

positive things on photos and if they comment more on photos posted by their friends or celebrities. If the comments are positive, they could indicate that users are rewarding one another for their posts.

The literature review indicates that photos adhering to the thin ideal are regularly rewarded in the media, however additional research should be performed to determine if the rewarded photos are heavily photoshopped/posed/edited, or if users are rewarding one another for looking realistic.

Instagram Usage and CPSA

The fifth hypothesis addressed competition stress. There are no positive correlations between behaviors or engagements. The only relationship noted in this section was between the CPSA scale and users who engage with the “other” category. There was not enough data taken to make any conclusions about this relationship. Perhaps users do not experience stress when comparing themselves to those they see on Instagram as they understand that the lifestyles they view are unattainable for them. However, because time spent on Instagram is related to high levels of competition stress, it is difficult to determine a solution for these feelings of stress.

Limitations

The usage of a convenience sample from mostly students at the University of Arkansas limits the generalizability of the study’s findings. The respondents were also encouraged to complete the study to receive extra credit, which may have influenced their responses. Furthermore, this sampling procedure is limited because it mainly represented the thoughts and opinions of young, white, college-aged women. Because most of the data included college-aged, white females, broad conclusions cannot be drawn. This group was not significantly diverse and therefore represent only a small percentage of larger society. This sample, therefore, mainly

represents the opinions and behaviors of college-aged females. This lack of diversity is also a limitation, as the data only represents a small portion of society and indicates the experiences of a group that has already been heavily studied in media research.

Additionally, most of the students who took this survey were advertising and public relations students in the journalism college of the University of Arkansas. This makes them more media-conscious than the typical individual.

Secondly, the number of questions on the survey could have limited the number of responses and created fatigue amongst respondents. Many people who took the survey indicated that it was lengthy and repetitive, a limitation of the study.

While the self-report questionnaire is statistically sound, it is interesting to note that users were able to open and close the questionnaire at their own discretion. Perhaps this led respondents to answer differently dependent on their mood at the particular time they were taking the study, meaning different sections could have inconsistent data.

Directions for Future Research

It is interesting to note that all but one of the studied disordered eating habits (both cognitive and behavioral) were positively correlated to the body dissatisfaction questions. This indicates that eating disorders are directly related to body dissatisfaction, a result not studied thoroughly in this paper. Because there was no correlation between behavioral eating disorders and Instagram usage (H2), it can be concluded that behavioral eating disorders are affected by forces outside of those focused on in this particular study. This information is useful for further studies as many previous media studies assume a positive correlation between media and eating disorders.

Body dissatisfaction was not positively correlated with Instagram usage (H3), meaning there are other influences that need to be addressed. The tripartite model of influence extends beyond social media, and further research should address exactly how influential each group is outside of social media. Perhaps there are other social media sites that directly influenced each group.

This research would benefit from a longitudinal study, focusing on the lives and changing behaviors, attitudes and beliefs of social media users. This information could prove or disprove the relevance of the dual pathway model and determine its relationship with social media in particular.

Conclusion

Social media is a contributing factor to almost every component of young people's lives. It is apparent in social settings, work, with family and has even expanded to include dating websites, etc. Because this media is so prevalent in the lives of most people today, it is important to determine how it is affecting us as a society. This study sought to determine how Instagram affects body-image. Because this site is relatively new, it is important to study its effects on users, especially young women who are most likely to develop eating disorders and body image problems. This study determined that cognitive eating disorders and physical appearance comparison are affected by Instagram usage, including access frequency, relationships and behaviors. More studies should be performed to determine just how influential this site is on the lives of young people, and if people are developing eating disorders, etc. purely because of Instagram and other social media sites. By studying young adults at a large southern university, researchers were able to determine that there is at least some relationship between Instagram usage and body image disorders.

References

- Aubrey, J. S. (2007). The impact of sexually objectifying media exposure on negative body emotions and sexual self-perceptions: Investigating the mediating role of body self-consciousness. *Mass Communication and Society* 10, 1–23.
doi:10.1080/15205430709337002
- Aubrey, J. S., & Frisby, C. M. (2011). Sexual objectification in music videos: A content analysis comparing gender and genre. *Mass Communication and Society* 14, 475–501.
doi:10.1080 /15205436.2010.513468.
- Ata, R. N., Ludden, A. B., Lally, M. M. (2006, Nov.). The effects of gender and family, friend and media influences on eating behaviors and body image during adolescence. *Journal of Youth and Adolescence* 36(8), 1024-1037.
- Barth, F. D., Starkman, H. (2016). Introduction to body meets mind: Eating disorders and body image-A twenty-first century perspective. *Clinical Social Work (44)*, 1-3.
- Barthélémy, Y. B., Selimbegović, L. & Chatard, A. (2018). Evidence that social comparison with the thin ideal affects implicit self-evaluation. *International Review of Social Psychology*, 31(1) 2.
- Bessenoff, G. R. (2006). Can the media affect us? Social comparison, self-discrepancy, and the thin ideal. *Psychology of Women Quarterly* 30, 239-251.
- Body Image and Advertising . (2000). How does today's advertising impact your body image? Retrieved from <http://www.healthplace.com/eating-disorders/articles/eating-disordersbody-image-and-advertising>.
- Bond, T. G. & Fox, C. M. (2010). Applying the Rasch model: Fundamental measurement in the nhuman sciences. Book. New York: Routledge.
- Bucchianeri, M. M., Arikian, A. J., Hannan, P. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2013). Body dissatisfaction from adolescence to young adulthood. Findings from a 10-year longitudinal study. *Body Image* 10(1). 10.1016/j.bodyim.2012.09.001
- Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality and Social Psychology Bulletin* 34, 1303–1314.
<https://doi.org/10.1177/0146167208320061>
- Buunk, A.P. & Gibbons, F.X. (2005). Social comparison orientation: A new perspective on those who do and those who don't compare with others. *Social Comparison and Social Psychology: Understanding Cognition, Intergroup Relations, and Culture*. 15-32.
10.1017/CBO9780511584329.003.

- Byrne, D. G., Davenport, S. C. & Mazanov, J. (2007). Profiles of adolescent stress: The development of the adolescent stress questionnaire (ASQ). *Journal of Adolescence* 30(3): 393-416.
- Cherry, K. (2018, April 29). What is sociocultural theory? *VeryWellMind*. Retrieved from <https://www.verywellmind.com/what-is-sociocultural-theory-2795088>
- Chen, J. (2020). Social media demographics to inform your brand's strategy in 2020. Sproutsocial. <https://sproutsocial.com/insights/new-social-media-demographics/#>
- Comstock, G., & Scharrer, E. (2007). *Media and the American child*. Burlington, MA: Academic Press.
- Conger, J. C., Conger, A. J., Costanzo, P. R., Wright, K. L., & Matter, J. A. (1980). The effects of social cues on the eating behavior of obese and normal subjects. *Journal of Personality*, 48, 258–271.
- Conley, T. D., & Ramsey, L. R. (2011). Killing us softly? Investigating portrayals of women and men in contemporary magazine advertisements. *Psychology of Women Quarterly*, 35, 469–478. doi:10.1177 /0361684311413383.
- Cooley E, Toray T. (2001). Body image and personality predictors of eating disorder symptoms during the college years. *International Journal of Eating Disorders*, 30, 28–36.
- Coomber, K. & King, R. (2008). The Role of Sisters in Body Image Dissatisfaction and Disordered Eating. *Sex Roles*. 59. 81-93. 10.1007/s11199-008-9413-7.
- Cusumano, D. L., & Thompson, J. K. (1997). Body image and body shape ideals in magazines: Exposure, awareness, and internalization. *Sex Roles: A Journal of Research*, 37(9-10), 701-721. <http://dx.doi.org/10.1007/BF02936336>
- de Bruyn, E. H., & van den Boom, D. C. (2005). Interpersonal behavior, peer popularity and self-esteem in early adolescence. *Social Development*, 14(4), 555-573. <http://dx.doi.org/10.1111/j.1467-9507.2005.00317.x>
- Eckler, P., Kalyango, Y., & Paasch, E. (2017). Facebook use and negative body image among U.S. college women. *Women and Health*, 2(57).
- Evans, A. (2014). Female body image and the mass media: A content analysis of primetime television advertisements and how they lead to body dissatisfaction in women. Retrieved from <https://0-search-proquest-com.library.uark.edu/docview/1554014739?pq-origsite=summon>

- Faer, L. M., Hendriks, A., Abed, R. T., & Figueredo, A. J. (2005). The Evolutionary Psychology of Eating Disorders: Female Competition for Mates or for Status? *Psychology and Psychotherapy*, 78, 397-417.
<http://dx.doi.org/10.1348/147608305X42929>
- Fairburn C. G, Beglin S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders* 16: 363–370.
- Fairburn, C., Cooper, Z., & O'Connor, M. (2014). Eating Disorder Examination (Edition 17.0D); April, 2014.
- Feinstein, B.A., Hershenberg, R., Bhatia, V., Latack, J.A., Meuwly, N. and Davila, J. (2013), Negative social comparison on Facebook and depressive symptoms: rumination as a mechanism. *Psychology of Popular Media Culture* (2)3: 161-170.
- Ferguson, C. J. (2013). In the eye of the beholder: Thin-ideal media affects some, but not most, viewers in a meta-analytic review of body dissatisfaction in women and men. *Psychology of Popular Media Culture*, 2, 20–37. <http://dx.doi.org/10.1037/a0030766>
- Firestone, L. (2020). Which is worst for your mental health: Instagram Facebook or YouTube? PsychAlive. <https://www.psychalive.org/worst-mental-health-instagram-facebook-youtube/>
- Fouts, G., & Burggraf, K. (2000). Television situation comedies: Female weight, male negative comments, and audience reactions. *Sex Roles*, 42, 925–932.
 doi:10.1023/A:1007054618340.
- Frison, E. and Eggermont, S. (2016). Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents' depressed mood. *Social Science Computer Review* 34(2): 153-171.
- Frost, J., & McKelvie, S. (2004). Self-esteem and body satisfaction in male and female elementary school, high school, and university students. *Sex Roles: A Journal of Research*, 51(1-2), 45-54. <http://dx.doi.org/10.1023/B:SERS.0000032308.90104.c6>
- Galdi, S., Maass, A., & Cadinu, M. (2014). Objectifying media: Their effect on gender role norms and sexual harassment of women. *Psychology of Women Quarterly*, 38, 398–413.
 doi:10.1177 /0361684313515185.
- Garner, D. M., Garfinkel, P. E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. *Psychological Reports*, 47(2), 483-491.
<http://dx.doi.org/10.2466/pr0.1980.47.2.483>
- Geary, D., & Bjorklund, D. (2000). Evolutionary Developmental Psychology. *Child Development*, 71, 57-65. <http://dx.doi.org/10.1111/1467-8624.00118>

- Gerbner, G. (1998). Cultivation analysis: An overview. *Mass Communication & Society*, 1(3/4): 180-187.
- Gerbner, G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). Growing up with television: Cultivation processes. In J. Bryant & D. Zillmann (Eds.), *LEA's communication series. Media effects: Advances in theory and research* (pp. 43-67). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Gerding, A. & Signorielli, N. (2014). Gender Roles in Tween Television Programming: A Content Analysis of Two Genres. *Sex Roles*. 70. 10.1007/s11199-013-0330-z.
- Gerdner, A. & Signorielli, N. (2014). Gender role portrayals in tween television programming: A content analysis. *Sex Roles* 70, 43-56.
- Gideon, N., Hawkes, N., Mond, J., Saunders, R., Tehanturia, K. & Serpell, L. (2016). Development and psychometric validation of the EDE-QS, a 12 item short form of the Eating Disorder Examination Questionnaire (EDE-Q). *PLoS One* 13(11).
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134, 460–476. <http://dx.doi.org/10.1037/0033-2909.134.3.460>
- Graff Low, K., Charanasomboon, S., Brown, C., Hiltunen, G., Long, K., Reinhalter, K., & Jones H. (2003). Internalization of the thin ideal, weight, and body image concerns. *Social Behavior and Personality*, 31(1), 81-90.
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31, 1–16. <http://dx.doi.org/10.1002/eat.10005>
- Guizzo, F., Canidu, M., Galdi, S., Maass, A. & Latrofa, M. (2016). Objecting to objectification: Women's collective action against sexual objectification on television. *Sex Roles* (77), 352-365.
- Hargreaves, D. A., & Tiggemann, M. (2004). Idealized media images and adolescent body image: Comparing boys and girls. *Body Image*, 1, 351–361. doi:10.1016/j.bodyim.2004.10.002.
- Harper, B., & Tiggemann, M. (2008). The effect of thin ideal media images on women's self-objectification, mood, and body image. *Sex Roles: A Journal of Research*, 58(9-10), 649-657. <http://dx.doi.org/10.1007/s11199-007-9379-x>
- Harris, R. J. (2013). *A cognitive psychology of mass communication* (4th ed.). Mahwah, NJ: Erlbaum. <http://dx.doi.org/10.4324/9780203110904>

- Hatton, E., & Trautner, M. N. (2011). Equal opportunity objectification? The sexualization of men and women on the cover of rolling stone. *Sexuality and Culture, 15*, 256–278. doi:10.1007/s12119-011-9093-2
- Hawkins, N., Richards, P. S., Granley, H. M., & Stein, D. M. (2004). The impact of exposure to the thin-ideal media image on women. *Eating Disorders, 12*, 35–50.
- Herman, C. P., Koenig-Nobert, S., Peterson, J. B., & Polivy, J. (2005). Matching effects on eating: do individual differences make a difference? *Appetite, 45*, 108–109.
- Hermans, R. C. J., Larsen, J. K., Herman, C. P., & Engels, R. C. M. E. (2008). Modeling of palatable food intake in female young adults: effects of perceived body size. *Appetite, 51*, 512–518.
- Hermans, R. Larsen, J. K., Herman, C. P., & Engels, R. (2009). Effects of social modeling on young women's nutrient-dense food intake. *Appetite 53*. 135-138.
- Hern, A. (2018). Instagram is supposed to be friendly. So why is it making people so miserable? *The Guardian*. Retrieved from <https://www.theguardian.com/technology/2018/sep/17/instagram-is-supposed-to-be-friendly-so-why-is-it-making-people-so-miserable>
- Hofmann, W., van Koningsbruggen, G. M., Stroebe, W., Ramanathan, S., & Aarts, H. (2010). As pleasure unfolds: Hedonic responses to tempting food. *Psychological Science, 21*, 1863–1870.
- Holmstrom, A. (2004). The effects of the media on body image: A meta-analysis. *Journal of Broadcasting & Electronic Media, 48*, 196–217. doi:10.1207/s15506878jobem4802_3.
- Hong, Seoyeon & Tandoc, Edson & Kim, Eunjin & Kim, Bokyoung & Wise, Kevin. (2012). The Real You? The Role of Visual Cues and Comment Congruence in Perceptions of Social Attractiveness from Facebook Profiles. *Cyberpsychology, behavior and social networking 15*. 339-44. 10.1089/cyber.2011.0511.
- Keery, H., van den Berg, P. & Thompson, J. K. (2004). An evaluation of the Tripartite Influence Model of body dissatisfaction and eating disturbance of young girls. *Body Image 1* (3): 237-251.
- Kemps, E., Tiggemann, M., & Hollitt, S. (2014). Exposure to television food advertising primes food-related cognitions and triggers motivation to eat. *Psychology and Health 29*(10), 1192-1205.
- Krawczyk, R. & Thompson, J. K. (2015). The effects of advertisements that sexually objectify women on state body dissatisfaction and judgements of women: The moderating roles of gender and internalization. *Body Image (15)*, 109-119. Retrieved from <https://uark.illiad.oclc.org/illiad/AFU/illiad.dll?Action=10&Form=75&Value=1205610>

- Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D.S. and Lin, N. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLOS One* 8 (8).
- Levine, M. P., & Chapman, K. (2011). Media influences on body image. In T. F. Cash & L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention 2*: 101–109.
- Levine, M. P., & Harrison, K. (2004). Media's role in the perpetuation and prevention of negative body image and disordered eating. In J. K. Thompson (Ed.), *Handbook of eating disorders and obesity* (pp. 565–589). New York, NY: Wiley.
- Levine, M. P., & Murnen, S. K. (2009). Everybody knows that mass media are/are not [pick one] a cause of eating disorders”: A critical review of evidence for a causal link between media, negative body image, and disordered eating in females. *Journal of Social and Clinical Psychology*, 28, 9–42. <http://dx.doi.org/10.1521/jscp.2009.28.1.9>
- Li, Y. (2019). Upward social comparison and depression in social network settings: The role of envy and self-efficacy. *Emerald Insight*.
- Liu, C., Xie, B., Chou, C.P., Koprowski, C., Zhou, D., Palmer, P., Sun, P., Guo, Q., Duan, L., Sun, X. and Johnson, C.A. (2007). Perceived stress, depression and food consumption frequency in the college students of China seven cities. *Physiology and Behavior* 92 (4): 748-754.
- Liu, Q.Q., Zhou, Z.K., Yang, X.J., Niu, G.F., Tian, Y. and Fan, C.Y. (2017). Upward social comparison on social network sites and depressive symptoms: a moderated mediation model of self-esteem and optimism. *Personality and Individual Differences* 113: 223-228
- Mabe, A. G., Forney, J. K. & Keel, P. K. (2014). Do you “like” my photo? Facebook use maintains eating disorder risk. *International Journal of Eating Disorders*, 47, 5.
- MacKay, N., & Covell, K. (1997). The impact of women in advertisements on attitudes toward women. *Sex Roles*, 36, 573–583. doi:10.1023/A:1025613923786.
- Madrigal, A. C. (2018). When did TV watching peak? The Atlantic. <https://www.theatlantic.com/technology/archive/2018/05/when-did-tv-watching-peak/561464/>
- Maltby, J., Houran, J., & McCutcheon, L. (2003). A clinical interpretation of attitudes and behaviors associated with celebrity worship. *Journal of Nervous and Mental Disease* 191(1). 10.1097/01.NMD.0000044442.62137.59
- Meir, E. P. & Gray, J. (2014). Facebook photo activity associated with body image disturbance in adolescent girls. *Cyberpsychology Behavior and Social Networking* 17(4): 199-206. doi: 10.1089/cyber.2013.0305

- Merten, D. E. (2004). Securing her experience: Friendship versus popularity. *Feminism & Psychology* 14(3): 361-65. <https://doi.org/10.1177/0959353504044635>
- Milburn, M., Mather, R., & Conrad, S. (2000). The effects of viewing Rrated movie scenes that objectify women on perceptions of date rape. *Sex Roles*, 43, 645–664. doi:10.1023/A:1007152507914.
- Mond J., van den Berg P., Boutelle K., Hannan P., Neumark-Sztainer D. (2011). Obesity, body dissatisfaction, and emotional well-being in early and late adolescence: Findings from the Project EAT study. *Journal of Adolescent Health* 48, 373–378.
- Moradi, B. & Huang, Y. P. (2008). Objectification theory of women: A decade of advances and future directions. *Psychology of Women Quarterly* 32(4): 377-398. <https://doi.org/10.1111/j.1471-6402.2008.00452.x>
- Morry, M. M., & Staska, S. L. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, 33(4), 269-279. <http://dx.doi.org/10.1037/h0087148>
- Myers, T. A. & Crowther, J.H. (2009). Social comparison as a predictor of self-dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology* 118(4), 683-98. doi: 10.1037/a0016763.
- Nemeroff, C. J., Stein, R. I., Diehl, N. S., & Smilack, K. M. (1994). From the Cleavers to the Clintons: Role choices and body orientation as reflected in magazine article content. *International Journal of Eating Disorders*, 16(2), 167-176. [http://dx.doi.org/10.1002/1098-108X\(199409\)16:2<167::AID-EAT2260160208>3.0.CO;2-D](http://dx.doi.org/10.1002/1098-108X(199409)16:2<167::AID-EAT2260160208>3.0.CO;2-D)
- Neumark-Sztainer D., Wall M.M., Guo J., Story M., Haines J., Eisenberg M.E. (2006). Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: How do dieters fare 5 years later? *Journal of the American Dietetic Association* 106, 559–568.
- Papies, E. K., Stroebe, W., & Aarts, H. (2007). Pleasure in the mind: Restrained eating and spontaneous hedonic thoughts about food. *Journal of Experimental Social Psychology*, 43, 810– 817.
- Paxton S. J., Neumark-Sztainer D., Hannan P. J, Haines J., Story M. (2006). Does body satisfaction matter? *Journal of Adolescent Health* 39, 244–251.
- Paxton, S., Schutz S., Wertheim, H. K., Muir, E. H. & Sharry, L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors and binge eating in adolescent girls. *Journal of Abnormal Psychology* 108(2): 255-266.

- Peter, J., & Valkenburg, P. M. (2007). Adolescents' exposure to a sexualized media environment and their notions of women as sex objects. *Sex Roles, 56*, 381–395. doi:10.1007/s11199-006-9176-y
- Pliner, P., & Mann, N. (2004). Influence of social norms and palatability on amount consumed and food choice. *Appetite, 42*, 227–237
- Polivy, J. & Herman, P. C. (2002). Causes of eating disorders. *Annual Review of Psychology 53*, 187-213.
- Puvia, E., & Vaes, J. (2013). Being a body: Women's appearance related self-views and their dehumanization of sexually objectified female targets. *Sex Roles, 68*, 484–495. doi:10.1007/s11199-012-0255-y.
- Ramsey, L. R. & Horan, A. L. (2016). Picture this: Women's self-sexualization in photos on social media? *Personality and Individual Differences, 133*, 85-90. <https://doi.org/10.1016/j.paid.2017.06.022>
- Rankin, J. L., Lane, D. J., Gibbons, F. X., & Gerrard, M. (2004). Adolescent Self-Consciousness: Longitudinal Age Changes and Gender Differences in Two Cohorts. *Journal of Research on Adolescence, 14*(1), 1-21. <https://doi.org/10.1111/j.1532-7795.2004.01401001.x>
- Rosenthal, B., & Marx, R. D. (1979). Modeling influences on the eating behavior of successful and unsuccessful dieters and untreated normal weight individuals. *Addictive Behaviors, 4*, 215–221.
- Roth, D. A., Herman, C. P., Polivy, J., & Pliner, P. (2001). Self-presentational conflict in social eating situations: a normative perspective. *Appetite, 36*, 165–171.
- Routley, N. (2017). The influence of Instagram. Visual Capitalist. <https://www.visualcapitalist.com/influence-of-instagram/>
- Ruckel, L. & Hill, M. S. (2016). Look @ me: Self-sexualization in Facebook photographs, body surveillance and body image. *Sexuality and Culture 21*(1). DOI: 10.1007/s12119-016-9376-8
- Salmon, C., Crawford, C. B., & Walters, S. (2008). Anorexic behavior, female competition and stress: *Developing the Female Competition Stress Test. Evolutionary Psychology 6*(1): 96-112. <http://dx.doi.org/10.1177/147470490800600112>
- Schaefer, L. M. & Thompson, J. K. (2018). The development and validation of the Physical Appearance Comparison Scale-3 (PACS-3). *Psychological Assessments 30*(10): 1330-1341. doi: 10.1037/pas0000576
- Schurigin O'Keeffe, G. & Clarke-Pearson, K. (2011). Clinical report-The impact of social media on children, adolescents, and families. *Academy of Pediatrics. 10.1542/peds.2011-0054*

- Shimizu, M., & Wansink, B. (2011). Watching food-related television increases caloric intake in restrained eaters. *Appetite* 57. 661-664.
- Shroff, H. & Thompson, J. K. (2006). Peer influences, body-image dissatisfaction, eating dysfunction and self-esteem in adolescent girls. *Journal of Health Psychology* 11 (4): 533-551.
- Smith, S. L., Choueiti, M., Scofield, E., & Pieper, K. (2013). Gender inequality in 500 popular films: Examining on-screen portrayals and behind-the-scenes employment patterns in motion pictures released between 2007 and 2012. Study by the University of Southern California Annenberg School for Communication & Journalism. Retrieved from http://annenberg.usc.edu/pages/~media/MDSCI/Gender_Inequality_in_500_Popular_Films_-_Smith_2013.ashx.
- Smith, A. R., Hames, J. L., & Joiner, T. E. Jr. (2013). Status update: maladaptive Facebook usage predicts increases in body dissatisfaction and bulimic symptoms. *Journal of Affect Disorders* 49(1-3): 235-40. doi: 10.1016/j.jad.2013.01.032.
- Stice, E., & Bearman, S. K. (2001). Body-image and eating disturbances prospectively predict increases in depressive symptoms in adolescent girls: A growth curve analysis. *Developmental Psychology*, 37(5), 597-607. <http://dx.doi.org/10.1037/0012-1649.37.5.597>
- Stice, E., Spangler, D. L., Stewart Agras, W. (2001). Exposure to media-portrayed thin-ideal images adversely affects vulnerable girls: A longitudinal experiment. *Journal of Social and Clinical Psychology* (20)3: 270-288.
- Stice, E., Schupak-Neuberg, E., Shaw, H. E., & Stein, R. I. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology*, 103(4), 836-840. <http://dx.doi.org/10.1037/0021-843X.103.4.836>
- Stice, E., Ziemba, C., Margolis, J., & Flick, P. (1996). The dual pathway model differentiates bulimics, subclinical bulimics, and controls: Testing the continuity hypothesis. *Behavior Therapy*, 27(4), 531-549. [http://dx.doi.org/10.1016/S0005-7894\(96\)80042-6](http://dx.doi.org/10.1016/S0005-7894(96)80042-6)
- Stormer, S. M., & Thompson, J. K. (1996). Explanations of body image disturbance: A test of maturational status, negative verbal commentary, social comparison, and sociocultural hypotheses. *International Journal of Eating Disorders*, 19(2), 193-202. [http://dx.doi.org/10.1002/\(SICI\)1098-108X\(199603\)19:2<193::AID-EAT10>3.0.CO;2-W](http://dx.doi.org/10.1002/(SICI)1098-108X(199603)19:2<193::AID-EAT10>3.0.CO;2-W)
- Striegel-Moore, R. H., & Cachelin, F. M. (2001). Etiology of eating disorders in women. *The Counseling Psychologist*, 29(5), 635-661. <http://dx.doi.org/10.1177/0011000001295002>

- Thompson, J. K., Cattarin, J., Fowler, B., & Fisher, E. (1995). The Perception of Teasing Scale (POTS): A revision and extension of the Physical Appearance Related Teasing Scale (PARTS). *Journal of Personality Assessment*, *65*(1), 146-157.
http://dx.doi.org/10.1207/s15327752jpa6501_11
- Thompson, J.K., Heinberg, L., & Tantleff, S. (1991). The Physical Appearance Comparison Scale (PACS). *The Behavior Therapist*, *14*, 174.
- Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ3): Development and validation. *International Journal Eating Disorders*, *35*, 293–304.
<http://dx.doi.org/10.1002/eat.10257>
- Thompson, J. K., Shroff, H. Herbozoz, S., Cafri, G., Rodriguez J., Rodriguez, M. (2007). Relations among multiple peer influences, body dissatisfaction, eating disturbance, and self-esteem: a comparison of average weight, at risk of overweight, and overweight adolescent girls. *Journal of Pediatric Psychology* *32*(1): 24-9.
- Tiggemann, M. & Miller, J. (2010). The Internet and adolescent girls' weight satisfaction and drive for thinness. *Sex Roles: A Journal of Research*, *63*(1-2), 79-90.
<http://dx.doi.org/10.1007/s11199-010-9789-z>
- Tiggemann, M. & Polivy, J. (2010). Upward and downward: Social comparison processing of thin idealized media images. *Psychology of Women Quarterly* *34*(3).
<https://doi.org/10.1111/j.1471-6402.2010.01581.x>
- Tylka, T. L. (2004). The Relation Between Body Dissatisfaction and Eating Disorder Symptomatology: An Analysis of Moderating Variables. *Journal of Counseling Psychology*, *51*(2), 178-191. <http://dx.doi.org/10.1037/0022-0167.51.2.178>
- U.S. Department of Health and Human Services. (2014). Overweight & obesity statistics. Retrieved from <https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity>
- Vaes, J., Paladino, P., & Puvia, E. (2011). Bare sexualized women complete human beings? Why men and women dehumanize sexually objectified women. *European Journal of Social Psychology*, *41*, 774–785. doi:10.1002/ejsp.824.
- Van Lange, P. A. M., Kruglanski, A. W. & Higgins, T. E. (2012). *Handbook of Theories of Social Psychology* (1). DOI: <http://dx.doi.org/10.4135/9781446249215>
- van Koningsbruggen, G. M., Stroebe, W., Papies, E., & Aarts, H. (2011). Implementation intentions as goal primes: Boosting self-control in tempting environments. *European Journal of Social Psychology*, *41*, 551–557.

- Vandenbosch, L., Vervloessem, D., & Eggermont, S. (2013). BI might get your heart racing in my skin-tight jeans[^]: Sexualization on music entertainment television. *Communication Studies*, 64, 178–194. doi:10.1080/10510974.2012.755640.
- Verduyn, P., Lee, D.S., Park, J., Shablack, H., Orvell, A., Bayer, J., Ybarra, O., Jonides, J. and Kross, E. (2015). Passive Facebook usage undermines affective well-being: experimental and longitudinal evidence. *Journal of Experimental Psychology* (144)2: 480-488.
- Vogel, E.A., Rose, J.P., Roberts, L.R. and Eckles, K. (2014), Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture* 3(4): 206-222.
- Want, S. C. (2009). Meta-analytic moderators of experimental exposure to media portrayals of women on female appearance satisfaction: Social comparisons as automatic processes. *Body Image*, 6: 257–269. <https://doi.org/10.1016/j.bodyim.2009.07.008>
- Ward, L. M. (2002). Does television exposure affect emerging adults' attitudes and assumptions about sexual relationships? Correlational and experimental confirmation. *Journal of Youth and Adolescence*, 31: 1–15.
- Ward, L. M., & Friedman, K. (2006). Using TV as a guide: Associations between television viewing and adolescents' sexual attitudes and behavior. *Journal of Research on Adolescence*, 16: 133–156. doi:10.1111/j.1532-7795.2006.00125.x.
- Ward, L. M., Merriwether, A., & Caruthers, A. (2006). Breasts are for men: Media, masculinity ideologies, and men's beliefs about women's bodies. *Sex Roles*, 55: 703–714. doi:10.1007/s11199-006-9125-9.
- Wertheim, E.H., Koerner J., Paxton, S.J. (2001). Longitudinal predictors of restrictive eating and bulimic tendencies in three different age groups of adolescent girls. *Journal of Youth and Adolescence* 30: 69–81.
- Wilcox, K., & Laird, J. D. (2000). The impact of media images of super-slender women on women's self-esteem: Identification, social comparison, and self-perception. *Journal of Research in Personality*, 34: 278–286. <https://doi.org/10.1006/jrpe.1999.2281>
- Wise, K., Alhabash, S. and Park, H. (2010). Emotional responses during social information seeking on Facebook. *Cyberpsychology, Behavior and Social Networking* 13(5): 555-562.
- Woods, B. (2013). Instagram-A brief history. *The Next Web*. Retrieved from <https://thenextweb.com/magazine/2013/06/21/instagram-a-brief-history/>
- Yamamiya, Y. & Shroff, H. & Thompson, J. (2008). The tripartite influence model of body image and eating disturbance: A replication with a Japanese sample. *The International Journal of Eating Disorders* 41: 88-91. 10.1002/eat.20444.

Appendices

Appendix 1: Instagram Engagement Questionnaire

The Instagram questionnaire was given to respondents to determine their usage of Instagram. They were additionally asked to report their feelings and reactions to a variety of Instagram posts from social media influencers and food companies.

1. How often do you access Instagram? Please select only one.
 - a. At least once a day
 - b. At least once a week
 - c. At least once a month
 - d. Rarely

2. Who do you engage with on Instagram? Please select all that apply.
 - a. Friends
 - b. Family
 - c. Celebrities
 - d. Brands
 - e. Other (please explain)

3. What are your common behaviors on Instagram? Please select all that apply.
 - a. Liking photos
 - b. Commenting on photos
 - c. Posting photos
 - d. Scrolling on the home page
 - e. Interacting with the search page
 - f. Other (please explain)

Appendix 2: Eating Behavior Questionnaire

To determine if a respondent has a history of disordered eating habits, a short questionnaire was asked before beginning the study. This information is necessary to compare the two factors and determine if there is a correlation between disordered eating behaviors and a respondents' perception of self. The academically and professionally acclaimed Eating Disorder Examination Questionnaire (EDE-Q) is a lengthy questionnaire designed to diagnose and monitor eating disorders (Fairburn & Beglin, 1994). The test has maintained statistical significance since its implication in 1994, however the test is regularly updated and the 17th edition was published in 2014. In 2016, the U.S. National Library of Medicine published a statistically sound, shortened version of the EDE-Q, the EDE-QS, with the 'S' representing the adjusted length (Gideon, et al., 2016). The shortened questionnaire passed the Rasch analysis test, a method used to determine the appropriateness and value of each question (Bond & Fox, 2010; Tennant & Conaghan, 2007).

To determine if a respondent does have a history of disordered eating habits, the results of each question will be added together and divided by the total (12) to create a mean. The acceptable, average mean for a person with normal eating behaviors is a 1.404 (Fairburn, et al., 2014). The averages will be recorded for each respondent; however, their result will not be communicated to them. The questionnaire is featured below:

ON HOW MANY OF THE PAST 7 DAYS....	0 days	1-2 days	3-5 days	6-7 days
1. Have you been deliberately <u>trying</u> to limit the amount of food you eat to influence your weight or shape (whether or not you have succeeded)?	0	1	2	3
2. Have you gone for long periods of time (e.g., 8 or more waking hours) without eating anything at all in order to influence your weight or shape?	0	1	2	3
3. Has thinking about <u>food, eating or calories</u> made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
4. Has thinking about your <u>weight or shape</u> made it very difficult to concentrate on things you are interested in (such as working, following a conversation or reading)?	0	1	2	3
5. Have you had a definite fear that you might gain weight?	0	1	2	3
6. Have you had a strong desire to lose weight?	0	1	2	3
7. Have you tried to control your weight or shape by making yourself sick (vomit) or taking laxatives?	0	1	2	3
8. Have you exercised in a driven or compulsive way as a means of controlling your weight, shape or body fat, or to burn off calories?	0	1	2	3
9. Have you had a sense of having lost control over your eating (at the time that you were eating)?	0	1	2	3
10. On how many of these days (<i>i.e. days on which you had a sense of having lost control over your eating</i>) did you eat what other people would regard as an <u>unusually large amount of food in one go</u> ?	0	1	2	3
OVER THE PAST 7 DAYS ...	Not at all	Slightly	Moderately	Markedly
11. Has your weight or shape influenced how you think about (judge) yourself as a person?	0	1	2	3
12. How dissatisfied have you been with your weight or shape?	0	1	2	3

Appendix 3: Physical Appearance Comparison Scale: Pre-Test

To determine if respondents have a high level of social comparison orientation without the direct influence of advertisements, the Physical Appearance Comparison Scale is used to measure the likelihood of a respondent to compare themselves to others in real life. To determine how likely a respondent is to compare themselves to others, the following questions were asked using a 5-point Likert scale (1-never, 5-always). The responses were summed and ranged from 5 to 25 with higher scores representing a higher likelihood to compare themselves to others.

1. At parties or other social events, I compare my physical appearance to the physical appearance of others.
2. The best way for a person to know if they are overweight or underweight is to compare their figure to the figure of others.
3. At parties or social events, I compare how I am dressed to how other people are dressed.
4. I compare my appearance to the appearance of others to determine if I am attractive or unattractive.
5. In social situations, I sometimes compare my figure to the figures of other people.
6. The PACS will be used with the Instagram questionnaire to determine if there is a correlation between existing appearance comparison and one's feelings toward and activities on Instagram.

Appendix 4: Competition Stress and Physical Appearance (CSPA): Pre-Test

To determine if respondents have a high level of social comparison orientation without the direct influence of advertisements, a personality test was created from the Female Competition Stress Test, developed and tested by Salmon, Crawford and Walters in 2008. To this day, the test retains its influence in the academic community as it was comprehensively tested on women of all ages, primarily focusing on undergraduate students from a variety of schools. This study in particular is concerned with how female-competition stress may increase anorexic type behavior, supported by Salmon, Crawford and Walters's study that created the Female Competition Stress Test to evaluate the appearance of same-sex competition amongst women.

The following questions are from their final questionnaire (Salmon, et al., 2008). The below questions were included in this study for their relevance to the following factors: Female-Female Competition Stress and Concern with Physical Appearance. The short questionnaire featured in this study was created directly from the Female-Competition Stress Test, however the study developers for this particular questionnaire raised the necessary level of significance to test both factors. The original authors determined a significance level of .25 was acceptable for question inclusion, however for the purposes of this study, the necessary level of significance will be .50 as the test studies both factors.

This is referred to as the CSPA Pre-Test. To test a respondent's level of competition-related stress, the following questions were asked using a 5-point Likert scale (1-completely like me, 5-completely unlike me). At the end of the study, the mean is collected from the sum of each question and compared to the CSPA Post-Test questionnaire at the end of the survey.

1. I am anxious about my appearance as compared to other girls.

2. I feel intimidated by women who seem to have it “all.”
3. I feel less attractive than most women.
4. I find it difficult trying to look like other women.
5. I am happy with how I look.

Appendix 5: Attitude Questionnaire

After respondents have viewed Instagram advertisements, they will answer an activity and attitude questionnaire which determines if they feel they compete with Instagram influencers or their peers. The questions are from the SATAQ-3 test by Thompson that focuses on media comparison instead of comparison behaviors in the real world.

1. Instagram celebrities are an important source of information about fashion and “being attractive.”
2. I feel pressure from Instagram to lose weight.
3. I would like my body to look like the influencers I see on Instagram.
4. I compare my body to the bodies of influencers on Instagram.
5. I try to look similar to Instagram influencers.
6. My friends on Instagram are an important source of information about fashion and “being attractive.”
7. I feel pressure from Instagram to look a certain way.
8. I would like my body to look like my peers’.
9. I compare my body to the bodies of my peers.
10. I try to look similar to my peers on Instagram.

Appendix 6: The CPSA Post-Test

To additionally determine the effects of advertisements on respondents, a final post-test is conducted. This test mirrors questions asked on the CPSA Pre-Test, however they have been edited to better reflect Instagram in particular.

1. I feel intimidated by women I follow who seem to have it “all.”
2. I am anxious about my appearance on Instagram as compared to other girls.
3. I feel less attractive than most women I see on Instagram.
4. I find it difficult trying to look like women I see on Instagram.
5. I am happy with how I appear to my followers.

Appendix 7: IRB Approval



To: Katherine Jatton Wayles
BELL 4188

From: Douglas James Adams, Chair
IRB Committee

Date: 04/04/2019

Action: Exemption Granted

Action Date: 04/04/2019

Protocol #: 1810156008

Study Title: Advertising in Instagram: A Quantitative Analysis of Social Media's
Influence on Body Image

The above-referenced protocol has been determined to be exempt. If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu. cc: Jee Young Chung, Investigator