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CROSSFIT, INSTAGRAM, AND THE MEDIATING EFFECTS OF SOCIAL COMPARISON ON SELF-ESTEEM

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CROSSFIT, INSTAGRAM AND THE MEDIATING EFFECTS OF SOCIAL COMPARISON ON SELF-ESTEEM

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DEDICATION

I would like to dedicate this thesis to a few important entities in my life. First, I want to dedicate this to my loving wife Jaskanwal. You push me to be a better man every day and without you this might have taken another 6 years. To my family, thank you for your continual support and love. To my friends, thank you for constantly reminding me I should have been done with this years ago haha. Lastly, to the University of the Pacific and the administration for letting me be part of this program. I know I wasn't the top applicant, but I hope to make this institution proud to say I was a student.

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CROSSFIT, INSTAGRAM AND THE MEDIATING EFFECTS OF SOCIAL COMPARISON ON SELF-ESTEEM

Abstract

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Over the last 15 years there has been a dynamic shift within the fitness industry, particularly for women. For decades, women were expected to participate in aerobic-based workouts and maintain a thin figure. This thin ideal has been harmful to women and contributed to low levels of self-esteem. CrossFit diverges from aerobics by encouraging strength training and teaching women that workouts can be functional, and beauty does not only lie in one's aesthetics. The emergence and growth of CrossFit is shifting fitness-related gender norms and expectations, and possibly contributing to higher levels of self-esteem in women. This shift has become more apparent and visible though the growth of social networking sites like Instagram. Since Instagram is a photo- and video-based platform, there are significant opportunities for social comparison. Therefore, researchers should attempt to better understand how women in CrossFit engage with Instagram, and more specifically, how social comparison mediates self-esteem. This research gained insight into CrossFit—a fitness program dominating worldwide and challenging harmful social norms for women within the fitness industry—by examining how women CrossFitters engage in social comparison on Instagram. This research fills a much-needed gap because there is a lack of research on women CrossFitters, Instagram, and social comparison. The researcher administered a survey consisting of seven scales and 72 questions throughout the greater Sacramento area measuring social comparison habits, self-esteem,

superiority, and Instagram use among women CrossFitters. The researcher used correlation analysis to answer the proposed hypotheses. Although the collected data did not fully support all hypotheses, the research produced significant results and implications that contribute to a better understanding of the current state of the fitness industry, Women CrossFitters' use of Instagram, and social comparison.

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CHAPTER 1: INTRODUCTION

The fitness industry has had a significant impact on the way women view themselves. Fitness is supposed to be an opportunity to create a body and mind that improves self-esteem, but through the years, this has not been the case for many. The fitness industry, at its very root, is a commodity that is sold through mass media, and together they create narratives that are, in many ways, harmful for women. Mass media such as magazines, television, billboards, radio, and social networking sites have been significant contributors to low self-esteem, and with the development and growth of social media, there are similar continuing impacts.

The use of social networking sites has increased significantly and so have their impacts. Reports of worldwide social networking activity indicate that there were 2.44 billion users by 2018. Facebook, Twitter, and YouTube are the most well-known and most visited social networking sites on the Internet (Snelson, 2016). Instagram is another social networking site that is popular, especially among young adults. While limited research is available on Instagram, estimates can be inferred though Facebook's data, such as number of photos posted, because Instagram is a photo-based platform. For example, nearly 10 million new photos are uploaded to Facebook every hour (Snelson, 2016), and at least 10 million photos are likely uploaded to Instagram each hour as well. This high photo upload rate provides women with many opportunities for appearance-related social comparisons, which has increased body image concerns among young women (Fardouly et al., 2015). Individuals who view photos on social media typically engage in social comparison, which can lead to feelings of body dissatisfaction (Fardouly et al., 2015). Social comparison can lead to body disaffection and feelings of inferiority across many mediums. The fitness industry and social media contribute to issues

surrounding low self-esteem and this research examines the effects of social comparison on self-esteem among women who participate in both a new fitness program, CrossFit, and social media.

The Problem

Over the past 70 years, the fitness industry has supported and perpetuated the thin ideals of beauty that many women cannot achieve and ultimately may harm them emotionally, physically, and psychologically. These harmful narratives have a significant impact on fitness participants' self-esteem. Engagement in the fitness industry and fitness marketing are two contributors that have affected women's self-esteem. Traditional fitness has contributed to unrealistic body images and self-perceptions that are unobtainable and frequently unhealthy. Fitness marketing continues to contribute to the belief that beauty, health, and self-worth are achieved though slender aesthetics. There is continued concern about how the growth of social networking sites, the growth of fitness-related engagement, and the tremendous opportunity for social comparison might affect women negatively.

Purpose of the Study

The purpose of this study is to gain insight into women CrossFitters, Instagram, and the mediating effects of social comparison on self-esteem. With the growth of social networking sites and CrossFit, there is an opportunity to gain insight into women who participate in CrossFit and use Instagram, and the effects that occur when they engage in social comparison. This study assesses women CrossFitters' self-esteem, their levels of engagement on Instagram, and how those engagements are affecting self-esteem through social comparison.

Definition of Key Terms

Social comparison: Social comparison refers to self-evaluating one's own attitudes, abilities, and traits in comparison with others (Yip & Kelly, 2013).

Downward social comparison: Downward social comparison refers to a self-evaluation defense mechanism in which individuals consciously or subconsciously look to other individuals or groups they consider worse off than themselves (Yip & Kelly, 2013).

Upward social comparison: Upward social comparison refers to a maladaptive self-evaluation behavior in which individuals consciously or subconsciously look to other individuals or groups they consider to be superior to themselves, which results in negative self-views (Yip & Kelly, 2013).

CrossFit: Greg Glassman founded CrossFit to be a strength and conditioning program that requires a broad range of physical adaption. CrossFit does not have a specific program; rather, it is a series of physical competences pulled from 10 recognized fitness domains. The aim of CrossFit is to design a comprehensive fitness program that prepares participants for the unknown (Glassman, 2007). The CrossFit prescription varies constantly and includes high-intensity, functional movement (Glassman, 2007). The methodology that drives CrossFit is entirely empirical in that the sport is supported by measurable, observable, and repeatable facts (Glassman, 2007). Further, the implementation of CrossFit suggests that it is a sport of fitness (Glassman, 2007).

CrossFit adaption: CrossFit adaptation refers to a commitment to evidence-based fitness and to working in collaboration with many coaches to coordinate the exercise program (Glassman, 2007).

Self-esteem: Self-esteem reflects an individual's overall confidence and his or her own self-worth (Hewitt, 2009).

Social comparison: Social Psychologist Leon Festinger (1954) proposed social comparison theory to describe the idea that individuals have an internal need to gain an accurate

self-evaluation. The theory explains that individuals evaluate their own actions by comparing themselves to others, which reduces uncertainty within themselves. Social comparison theory evolved to include the concepts of downward and upward comparison, which expanded understanding into the motivations of social comparisons (Gruder, 1971; Schachter, 1959; Willis, 1981).

The thin ideal: The thin ideal refers to the concept of the ideal slim female figure that is feminine with a small waist and little body fat (Low et al., 2003).

Traditional fitness training: Traditional fitness training aims to improve muscular fitness and flexibility. In traditional fitness, the individual experiences muscle build-up, improvement in bone density, and reduced body fat percentage. Traditional fitness can be seen in fitness centers, gyms, health clubs, and fitness studios that do not include functional training as a philosophy (Rahate, 2015).

Social networking site: Obar and Wildman (2015) defined social networking sites by these four commonalities: (1) Social media services are (currently) Web 2.0 Internet-based applications, (2) User-generated content is the lifeblood of social media, (3) Individuals and groups create user-specific profiles for a site or app designed and maintained by a social media service, and (4) Social media services facilitate the development of social networks online by connecting a profile with those of other individuals and/or groups (p. 745).

Significance of the Study

This study fills research gaps in three areas: fitness, social networking sites, and social psychology surrounding social comparison and self-esteem for women. The fitness industry has been a catalyst for the classification of performance-based gender roles (Barbazon, 2006; Brace-Govan, 2004). Stereotypes of these performance-based activities have also contributed to a

skewed classification of men and women in the fitness industry. Traditional gyms have reinforced the stereotypes that women are weak, delicate, and incapable of lifting heavy weights, and so, should not lift heavy weights to maintain an idolized physique of slenderness (Datta & Kulik, 2012). The emergence of the thin ideal has further contributed to perceptions of body dissatisfaction within the fitness industry. These gender norms and body dissatisfaction have contributed to reduced levels of self-esteem among women. However, because CrossFit encourages women to be strong and muscular, it diverges from these stereotypes and disrupts traditional gender roles. Further, little research exists on women who participate in CrossFit.

With the emergence of the fitness industry and the growth of media, and social media specifically within the fitness market, numerous opportunities exist for social comparison among women. Fardouly et al. (2015) examined Facebook usage and found that pre-teenage girls, female high school students, and female university students reported more body image and self-esteem concerns than non-users. In addition, data revealed that the more time spent on Facebook, the greater the association with body image issues among these three groups (Fardouly et al., 2015). Although significant findings indicate body image concerns among women on social networking sites, a gap in the research exists related to Instagram specifically. This study investigates women CrossFitters, Instagram, and the mediating effects of social comparison on self-esteem.

Feasibility of the Study

The researcher conducted this study within the greater Sacramento, California area during spring of 2019. Data was collected using an online survey of 270 women CrossFitters. The researcher attended CrossFit classes at peak hours for no longer than 3 months to ask individuals to participate in the online survey. Traditional gyms are typically open throughout the day (e.g.,

5am-11pm); however, CrossFit gyms are only open when classes are in session or for short periods for open gym (e.g., Class: 5am-7am; Open Gym 5pm-7pm; Class 7pm-9pm). If members could not take the survey online at the moment, they were left with a flier directing them to take the survey online at a time that worked for them.

CHAPTER 2: REVIEW OF THE LITERATURE

Social Comparison

In 1954, American social psychologist Leon Festinger proposed social comparison theory to provide insight on how and why individuals compare themselves to others. His work, *A Theory of Social Comparison Processes*, developed the framework for social comparison theory. He believed that without objective measures for self-evaluation, individuals compare themselves to others to determine their self-worth and gain objectivity. Festinger pioneered social comparison theory and allowed for deeper insight into the effects of social comparison on self-image and self-esteem. This theory explains how individuals compare themselves to others who share similar characteristics to reduce uncertainty and define who they are. Festinger's theory expressed that for both opinions and behaviors in which no social measurable means exist, the individual compares him or herself to others' abilities to determine whether their opinions and behaviors are correct. Thus, the need to know oneself combined with the impossibility of determining opinions or abilities by referencing the physical world motivates people to compare themselves to others (1954).

According to social comparison theory, an individual compares themself to individuals who do not diverge too dramatically from them. Festinger hypothesizes that if an individual's abilities are too far above or far below that of his or her own, then the likelihood of accurately comparing diminishes. Festinger believed that individuals seek similar individuals when comparing, and if an individual is too different, he or she will seek individuals who are more comparable. When individuals compare themselves to others who are similar, they are able to make better comparisons and more easily evaluate themselves (1954).

Some of Festinger's final thoughts on social comparison emphasize the consequences of social comparison. Social comparison might cause changes in one's opinions or abilities, and most likely, these changes move in the direction of uniformity (i.e., assimilation) (Crusius et al., 2011). Individuals use social comparison as a way to legitimatize themselves and their actions, but in doing so, they may actually end up changing their attitudes and behaviors to conform to the group, or in some cases, diverge from the group. How individuals engage in social comparison determine these results.

Social Comparison Advancements and Self-Esteem

Over the years, the social comparison theory framework experienced several advancements. Following Festinger's initial theory, researchers began to focus on understanding motivations for engaging in social comparison, such as self-evaluation and self-enhancement. Self-evaluation is when individuals use social comparison to gain accurate insight into who they are. Self-enhancement is interpreting, distorting, or ignoring information to make upward or downward comparison depending on which strategy will best improve their self-enhancement (Wood, 1989). Social comparison may be avoided if there is an issue with self-enhancement. Unlike self-evaluation, individuals who engage in self-enhancement may not seek out individuals similar to themselves; in fact, individuals might perceive others similar to themselves as threats (Wood, 1989). The concepts of self-evaluation and self-enhancement further explain why individuals engaged in social comparison, and researchers have continued to develop these concepts to enhance Festinger's initial framework.

Wills introduced the concept of upward and downward comparisons (Willis, 1981, as cited in Wills et al. 2014). The purpose of upward and downward social comparison is to gain self-knowledge, examine one's strengths and weakness, and identify distinctive traits and

characteristics (Yip & Kelly, 2013). An individual uses social comparison when they compare themself to those, they deem to be better than them in some way. There are potential advantages to this, such as striving to be like those individuals, but the risk is deflating an individual's view of themself and lowering their self-esteem. Upward social comparison can also cause individuals to lower their ratings of their own attractiveness (Yip & Kelly, 2013). Conversely, and individual uses downward social comparison when they compare themself to those, they deem to be worse than them in some way (Yip & Kelly, 2013). This method is used as a defensive mechanism for self-evaluation. Individuals who perceive individuals or groups as below them tend to feel better about themselves and their personal situations. Individuals use upward and downward social comparison knowingly or unknowingly as a function of social comparison.

Aspinwall and Taylor's (1993) work "Effects of social comparison direction, threat, and self- esteem on affect, self-evaluation, and expected success" examined how moderators such as self-esteem drive individuals to make upward and downward social comparisons. Self-esteem is the measure of one's self-worth and is a reflection of both intrapersonal and interpersonal processes. Within self-esteem there is the ability to have a range of low to high self-esteem, which can have a variety of effects on the human psyche and behavior. Individuals with high self-esteem tend to have higher levels of self-confidence or feelings of superiority, while those with low self-esteem often lack self-confidence and have feelings of inferiority. Aspinwall and Taylor found that those with high levels of self-esteem often compared upward because this often provided them with more motivation and hope (Aspinwall & Taylor, 1993). Although, this was not always the case; if an individual had recently experienced a threat to their self-esteem or a setback socially, comparing upward could have a negative effect. When it came to low levels

of self-esteem, they found that individuals would often compare downward to help improve their mood, but their mood would not improve to the same level as someone with high self-esteem (Aspinwall & Taylor, 1993). Moderators are important because when researchers believe that certain individuals or groups have high or low levels of self-esteem, they are able to factor in moderators and examine individual's social comparison habits and outcomes.

The Fitness Industry, Social Comparison, and Self-Esteem

During the 1940s and 1950s, gyms and health clubs began to spread across the United States, and a distinct separation occurred between gyms and health clubs. Specifically, health clubs promoted wellness and vigor, while gyms promoted masculinity and power (Merritt, 2012). In the 1960s, gyms became the image for a healthy body, professional success, and sexuality emphasized athleticism (Stern, 2008). With the growth of fitness complexes, gyms, and dance studios, the thin ideal became increasingly validated (Stern, 2008). By the 1970s, there were approximately 1.7 million memberships (Merritt, 2012). After the 1970s, fitness became more highly valued in mainstream America. Fitness became so highly valued that during this time, corporations began to make in-house gyms for employees, fitness clubs transitioned to more of a traditional gym model, and by the 1980s, fitness memberships had increased to approximately 13 million (Merritt, 2012). Over the next 20 years, the fitness industry continued to grow, with gym memberships growing to over 60 million. Through those decades, physical activity evolved from a need to survive to a need to create a culturally standard aesthetic appearance.

Through the growth of the fitness industry the thin ideal became more and more of a reality for women. Traditional gyms have continued to market the delusion of a "perfect" body through physical activity. These gyms typically focus on one's aesthetic with the ultimate goal

of being slender or aesthetically pleasing. Over the last 70 years within the Western world, preferences have shifted to thin-figured women. Being fit, monitoring an individual's weight, and having an aesthetically pleasing appearance have become ubiquitous and equally important (Barbazon, 2006). Further, the ideal size has decreased and demands for thinness have increased, while the female obesity rate has simultaneously increased, causing a disparity and making the iconic body difficult for women to maintain (Pinhas et al., 1999). This disparity has created gaps between a woman's size and the expected appearance, and this disparity has contributed to the growth of aerobics and the thin ideal in the fitness industry.

Women have encountered stimuli that reinforce the need to be thin, and they have been taught that achieving this goal should be done through aerobic workouts and classes. Aerobic workouts are high intensity programs that often trigger weight loss. Aerobic workouts were first created by gyms as a way to manage weight and to maintain a healthy heart, but over the years, the fitness industry made aerobic activities synonymous with ways to be thin. The fitness industry developed aerobic workouts for specific genders. For example, distinct guidelines are in place for female workouts, and women are often discouraged from lifting weights the way men do (Brace-Govan, 2004). The glamorization of aerobics has been a major contributor to the thin ideal. Aerobics became the primary tool in the fitness industry and in the media to achieve an aesthetic goal. Aerobics is one of the few physical activities in which women are encouraged unequivocally to participate (Collins, 2002). Even if women do want to deviate from aerobics, they encounter challenges.

Many programs have attempted to normalize alternative fitness activities that encourage weightlifting. Sports have provided alternatives to traditional fitness; however, these alternatives are often difficult for women who must ignore family members and friends' advice. Deviating

from traditional fitness expectations, in this way, makes these women odd (Brace-Govan, 2004). In the realm of bodybuilding, olympic lifting, and power lifting, women are questioned and treated as weird or erotic spectacles. Traditional fitness has created an ideology of slender and cardio-driven starved women who can and should never pick up a weight and gain strength (Mumford & Choudry, 2000) These standards and judgments have contributed to women focusing on becoming thin though aerobics. Some women who conform to traditional gender roles in fitness do achieve forms of empowerment; however, such empowerment is often second to the cosmetic pursuit of thinness (Scott-Dixon, 2008). The thin ideal has been a strong influence in the fitness community, and often contributes to social comparison engagement.

The Fitness Industry and Social Comparison

There is a strong tendency to compare to others, and social comparison within the fitness industry has negative affected the fitness community. Within the thin ideal paradigm, it is not uncommon to see body dissatisfaction, eating disorders, and low levels of self-esteem. Research has shown that there is an internal conflict for individuals because fitness allows them to gain confidence through improving their physical fitness, but also, they often end up comparing themselves to others, which can have a negative outcome. Datta and Kulik (2012) explored social comparison in a fitness environment and its correlations to body satisfaction. Their research showed that over the past 70 years, the ideal female body image depicted by Western media has changed from full-figured and curvy Marilyn Monroe to tiny and slender. The research conveyed that this tiny and slender image, although popular worldwide, was accepted and expressed heavily in the fitness industry. They found that many women have internalized the thin ideal, but few can reach this expectation of thinness (Datta & Kulik, 2012). Exposure to thin-ideal media icons may be largely responsible for the high rates of body dissatisfaction and

eating disorders among women in Western societies (Pila et al., 2014). As the standards for thinness in the fitness industry have become more prominent, individuals' tendencies to physically compare themselves to others has also become more prevalent. Social comparison occurs in a naturalistic environment as well as in an online environment, and it contributes significantly to body dissatisfaction and low self-esteem among women in Western society.

Naturalistic social comparison occurs daily and is significant when examining body dissatisfaction and low self-esteem. Despite the limited research, Wasilenko et al. (2007) argued that social comparisons are still more likely to occur among or around other people than media figures. The researchers found a positive correlation between women exposed to thin peers and decreased body satisfaction (Wasilenko et al., 2007). These findings were consistent with other studies demonstrating that comparison with fit, slender peers causes lower levels of self-esteem and body dissatisfaction among women (Wasilenko et al., 2007). The findings also indicated that lower levels of body satisfaction occurred when women were in view of fit peers and using the same equipment. Research findings suggest that individuals gather information about their own levels of attractiveness or self-worth through upward and downward social comparison.

Upward social comparison can have a devastating effect on individuals, especially women. When making upward social comparisons, both men and women have reported increased levels of body dissatisfaction. However, when dealing with body dissatisfaction in fitness, women are more affected than men. This occurrence is typical because male appearance-related comparisons are driven by muscularity through weightlifting, while female comparisons are driven toward the desire of a slender frame, and they are more strongly judged on their physical appearance (Pila et al., 2014). Although there has not been a significant shift in this

negative fitness beauty paradigm over the last 70 years, one group of fitness consumers is challenging the ideals of what it means to be beautiful, happy, confident, and healthy.

In 2005, Greg Glassman, retired Navy Seal and fitness enthusiast, created CrossFit: a program that utilizes high intensity interval training that focuses on strength and conditioning made up of functional movements. Instead of a program that focuses on improving physical aesthetics, this program focuses on improving movements that are done in everyday life, such as squatting, pulling, and pushing. Traditionally, fitness is seen as a way for women to maintain slenderness through aerobic-based programing. Although aerobics are a component of CrossFit, for the first time in history, a worldwide mainstream program is encouraging women to lift weights, compete with men as equals on the gym floor, and build muscles through functional strength training. According to the "Official CrossFit Affiliate map" (2019), there are over 15,000 affiliates in 150 counties. This programming is altering the way women look, giving them a more muscular physique, building more strength, and creating an athletic appearance that is also being accepted worldwide. The idea that women can lift weights, be strong, have muscles, perform at high levels, and still be considered "normal" and "beautiful," completely contrasts the ideals of the past. Ultimately, CrossFit is producing positive emotional and physical outcomes for women who participate (Cej, 2016).

The spirit of CrossFit is best represented in an article and video that was released by CrossFit HQ on November 17, 2016 titled, "Letting Beauty Speak." During this time, CrossFit had a significant campaign to address true beauty, health, and fitness, and this segment spoke to that. The narrator, Marty (2016), expressed CrossFit headquarters' views on primitive standards surrounding beauty and health by stating, "The heroin chic glorified by the fashion industry is at

its root, inhuman. It demands that life's rich resources—mobility, strength, even intelligence—be squandered in the pursuit of a pitiful aesthetic." He goes on to say,

> "There are people who spend their entire lives allowing the reflection in the mirror to determine their self-esteem, submitting to a cultural judgment established decades ago. But in CrossFit gyms all over the world, mirrors are conspicuous by their absence. Fitness is gauged in reps, in speed, power, virtuosity. And beauty is measured in joy. And in pride".

These excerpts show a strong stance that self-esteem does not depend on the way one looks. These ideas have never before been brought to the forefront of the fitness industry, and more importantly, been embraced around the globe. They reflect the belief that beauty and self-worth are not measured by aesthetics, but rather, by improving, challenging, and growing within one's fitness journey, and that masculinity and femininity are not defined by the way one looks or by the content of their workouts. The narrative "strong is beautiful" diverges vastly from the traditional beauty paradigm. CrossFit has seen exponential growth in the fitness industry and is attempting to change established norms within the industry.

With the growth of this program, the increase in membership, and a new way of thinking about beauty, happiness, and self-esteem, it important to recognize that CrossFit is the beginning of a shift for the fitness industry as a whole. For the first time, a large group of women are participating in a fitness program and gaining high levels of self-esteem not only due to physical achievements, but also due to a new and truly encouraging emotional environment. It is because of this new program and these new ideologies that CrossFit is changing the way women feel about themselves (Cej, 2016), and potentially, the ways they engage in social comparison. Although the fitness industry is changing, there are other contributors that affect social comparison, such as social networking sites.

Social Networking Sites, Social Comparison, and Self-Esteem

The landscape of social networking sites is vast and ever growing. Even in the most remote areas of the world, social networking sites, such as Facebook, Twitter, Flickr, Photobucket, Tumblr, Pinterest, Spotify, and Instagram, have quickly gained popularity. The inception of social networking sites can be traced back to 1997 with a website called Six Degrees (Hale, 2016). From 1997 to 2001, Six Degrees—based on the six degree of separation theory—was the standard social networking site that allowed users to create profiles and "friend" others, even if they did not have profiles. Although Six Degrees eventually transitioned into a blogging site and currently would not fit the definition of a social networking site, it was one of the first means to communicate with others instantly (Media, 2016). Shortly after the creation of Six Degrees, other platforms, such as ICQ and America Online (AOL), advanced social networking with the use of instant messenger (Media, 2016). By 2000, nearly 100 million people worldwide had access to the Internet, and social networking surged with the creation of Myspace. Myspace was the first social networking profile-based website. Myspace eventually transitioned to a platform used to promote music and musical artists. As Myspace gained popularity, professional social networking sites, such as LinkedIn, increased. The formats of these two social networking sites are still in use today. However, it was the creation of Facebook that grew social networking sites' user base.

In 2004, Mark Zuckerberg launched Facebook (Media, 2016), which is currently the most widely used social networking platform with over one billion users worldwide. Facebook transpired out of a Harvard dorm room and was the inspiration for many more platforms to come. According to the Pew Research Center, in September of 2014, Facebook was the most

popular social networking site (Duggan et al., 2015). Facebook launched the growth of additional social networking sites.

From 2006 to 2012, the number of social networking sites increased. Twitter was developed in 2006 as a unique service that allows users to send "tweets" of 140 characters or less (Media, 2016). Within 10 years, Twitter gained over 500 million users (Media, 2016). Instagram, founded in 2010, had a modest but powerful inception into the social networking market (Media, 2016). Instagram is a mobile photo- and video-sharing application. Instagram stood out by allowing users to choose filters and customize images to create the perfect photos. These features allow the average photo-taker to create artistic and professional-looking images. Instagram quickly grew in popularity because users are able to post and share content in real time over multiple platforms.

Instagram continued to grow and has since dominated the social networking market. From 2010 to 2011, Instagram had close to 30 million users (Media, 2016). During the spring of 2012, Facebook's one-billion-dollar acquisition of Instagram quickly increased the number of users to over 80 million. Within months of the acquisition, followers nearly doubled to 150 million by the end of 2013 (Media, 2016). In May of 2013, Instagram created the photo sharing feature, which allows users to tag others in their photos and to tag company brands (Media, 2016). Instagram also added private chat, which allows members to send private videos and messages to one another (Media, 2016). Prior to the private chat feature, users could only communicate through public comments and likes. In 2013, Instagram was *Time Magazine's* top 50 applications for the Android (Media, 2016). By 2014, Instagram was the fastest growing social network, which had a 23% increase in users within just 6 months (Hale, 2016). Instagram

surpassed Twitter on mobile devices with nearly 35 million mobile users—5 million more users than Twitter and was becoming more and more popular.

Instagram was quickly becoming one of the most widely used social networking sites among all demographics. By 2015, 18-29-year-old users increased their frequency of use to 53%, and within that age range, 49% of all Instagrammers used the site daily. Besides young adults, women were found to use Instagram more frequently than men. This finding was also true for Hispanic and African American urban and suburban users. Nearly half of Instagram members used the platform daily, and 32% reported using Instagram multiple times a day (Duggan et al., 2015). Further, 24% of Instagram users reported checking in weekly and only 26% used Instagram less often than weekly (Duggan et al., 2015). By 2015, almost half of Internet users (52%) were using two or more platforms, compared to 42% of Internet users in 2013. A majority (94%) of Instagram users also used Facebook (Duggan et al., 2015). Although Facebook is the most commonly used platform, 58% of Instagram users were also Twitter users (Duggan et al., 2015). Among the non-Facebook platforms, Instagram and Twitter were the most used. Although Facebook is the most commonly used platform, Instagram still reach millions of people across the globe.

Over the years, platforms like Facebook, Twitter, and Instagram have continued to grow in popularity. There is extensive engagement, frequency of use, and high levels of intensity of use on these platforms worldwide. As membership continues to grow on these platforms, social comparison continues to grow as well.

Social Networking Sites and Social Comparison

With the growth of social networking sites there are more opportunities for social comparison to occur. The literature on the effects of media on body image and self-perception is

extensive; however, limited research exists for the effects of social networking sites on young women's body images and self-perceptions (Perloff, 2014). According to Perloff, for "young adults, particularly women, and their reliance on social networking sites, it is important to appreciate ways that social networking sites can influence perceptions of body image and body image disturbance" (p. 363). Vogel et al. (2014) explored social networking sites and social comparison and given the importance of social networking sites on a number of social functions, he proposed that people can use social networking sites as a basis for social comparative functions such as self-evaluation or self-enhancement. Since social networking sites provide lots of incentives for social comparison, there is a question whether access to social networking sites is correlated with improvements in self-evaluation. With over two billion users worldwide, Facebook offers many opportunities for comparison. Vogel et al. (2014) further explain that social networking sites allow users to construct electronic profiles for themselves, provide details about their lives and experiences, post pictures, maintain relationships, plan social events, meet new people, make observations of others' lives, fulfill belongingness needs, and express their beliefs, preferences, and emotions (p. 206). As people increasingly use social networking sites, social comparison is a daily reality. Social networking sites such as Facebook include quantitative and qualitative information about individuals' lives, and individuals are valued through how many likes or comments they receive. This data can be used to measure upward and downward comparison among users.

Social networking site engagement can have a negative effect on individuals. Findings indicate that individuals who spend more time on Facebook tend to have lower perceptions of their well-being (Vogel et al., 2014). Perloff (2014) used social cognitive theory, mass communication-focused cultivation model, and sociocultural perspective on body image to study

the large role mass media plays in communicating cultural stereotypes and the way the body should look. The social cognitive theory gives relevance to the idea that exposure to mass media messages allows for unrealistic paradigms of female beauty. The findings showed that Facebook users had poorer trait self-esteem (lifelong perceptions), which is mediated by greater exposure to upward social comparisons. The findings also indicated that—pertaining to state self-esteem—self-evaluation was lower when the target profile made upward comparisons; the opposite was true for downward comparisons (Vogel et al., 2014). Individuals engage in social comparison on these platforms to gauge who they are and how they are doing in life.

The development of and exposure to mass media continues to have a strong hold on the women of our world. This has become even more true with the growth of social networking sites. Social networking sites have shaped the world significantly, and ongoing research takes steps toward understanding the effects that social networking sites have on social comparisons. Although social networking sites provide insight to social comparison and its effects on self-esteem, there are still other significant factors to consider.

Income, Demographics, Self-Esteem, Well-Being, and Social Comparison

An individual's happiness or self-esteem is influenced by many factors, such as age, marital status, and income. Many studies have shown a positive correlation between levels of happiness or perceived well-being and higher levels of self-esteem. Research has shown that on average, rich people tend to be happier and have higher levels of self-esteem than poor people (Alderson & Katz-Gerro, 2016). When the two were examined in the literature, self-esteem and income had a clear bivariate association (Alderson & Katz-Gerro, 2016). Scales such as the Social Status Consumption and Happiness Survey (SCH) show a direct correlation of 2 to 3 times higher levels of happiness for wealthy individuals than poor individuals (Alderson & Katz-

Gerro, 2016). Other studies support these findings, including the connection between happiness and income.

Income can contribute significantly to one's happiness. From 1972-2012, researchers used the General Social Survey (GSS) to survey Americans, and the findings showed that higher levels of income resulted in higher levels of happiness. Although there are many studies that support these findings, breakthrough studies on happiness measurements such as Richard Easterlin's research on the Easterlin Paradox must be considered when examining happiness, self-esteem, and social comparison. This paradox is also known as the income-happiness paradox. The findings show there is a positive relationship between happiness and high income, although the average level of happiness does not necessarily increase as the average income does. Research has also shown that at singular levels, individuals who are rich are able to meet the socially constructed demands and standards of society, which contribute to higher levels of happiness (Alderson & Katz-Gerro, 2016). These people enjoy higher levels of consumption of high-quality goods, which leads to increased levels of happiness. Although these findings are reliable, a certain level of happiness plateaus; as the income rises, the frame of reference shifts and happiness does not rise (Alderson & Katz-Gerro, 2016).

When considering levels of well-being, it is important to remember that there are both subjective well-being and absolute well-being. Alderson and Gerro (2016) examined absolute income or the total wages someone earns and the effect that might have on happiness. Their work showed that

> "the net of absolute income and an array of factors known to be related to subjective well-being, relative income has a pronounced effect on happiness. Absolute income, in contrast, has a small independent effect that is not significant at conventional levels" (Alderson & Katz-Gerro, 2016, p. 41).

It should be noted that the more important it is for people to compare their income to others, the less happy they are. Income is an object of social comparison, and the more intense the social comparison, the greater the association with subjective well-being (Alderson & Katz-Gerro, 2016, p. 37). Although income can play a factor in one's happiness and self-esteem, it is important to recognize there are still factors that may contribute to stagnated happiness. Studies also show that individuals who are wealthy tend to compare themselves to those of proximity and of equal means. This is significant and relates to social comparison because individuals assess themselves relative to others. When comparing, they are most likely to choose individuals like their family members, friends, neighbors, and coworkers.

In addition to income, other factors must be considered when examining self-esteem, such as gender, age, marital status, and ethnicity. The relationship between age and subjective well-being is U-shaped. Findings have shown that happiness declines through early adulthood, reaches its lowest point in an individual's thirties or forties and then begins to rise again (Alderson & Katz-Gerro, 2016, p. 32). Research has also shown that in the United States, women tend to report higher levels of subjective well-being than men, but this gap is always changing, and in recent years, this gap has been in decline (Alderson & Katz-Gerro, 2016, p. 32). Married people tend to report higher subjective well-being than the never-married or previously-married (Alderson & Katz-Gerro, 2016, p. 32) White Americans are happier than non-whites, though as with the gender gap, the racial gap has eroded in recent years (Alderson & Katz-Gerro, 2016, p. 32).

There are many determining factors that can contribute to happiness, well-being, and self-esteem. All of these factors play a role when evaluating social comparison and its effect on self-

esteem. Understanding these contributing factors can allow researchers to recognize how individuals compare themselves to others.

Summary

Social comparison occurs on a daily basis. Social comparison is often used in times of uncertainty to gain insight and rationalize who we are as individuals. Through upward and downward social comparison, individuals aim to achieve self-evaluation or self-enhancement. Every social comparison that occurs has a starting point and an ending point. Modifiers such as an individual's current state of self-esteem establish the starting point and determine how social comparison will occur and the outcome that will be achieved through social comparison. The thin ideal in the fitness industry is a significant moderator that contributes to social comparison habits. Through the growth of the fitness industry, and fitness media specifically, engaging in social comparison on social networking sites has become more common. All of these components have significant impacts on women's self-esteem. For many years, the fitness industry grew in membership size but had stagnated ideologies. But over the last 15 years, CrossFit has changed perceptions of what it means to be beautiful, capable, and effective in the gym.

Due to gaps in research, the purpose of this study is to gain insight into women CrossFitters, how women CrossFitters use Instagram as a medium for social comparison, and how both affect self-esteem. CrossFit has challenged the beauty paradigms that exist in traditional fitness industries, and through the medium of Instagram, it is possible to see if there have been any changes in the ways women compare themselves and how this comparison affects their self-esteem.

Hypotheses

A vast majority of the literature has focused on Facebook; however, little research exists on Instagram use and the mediating effects of social comparison on self-esteem. Additionally, little to no research exists on the CrossFit industry and its effects on self-esteem. This study seeks to fill these research gaps by gaining insight into women CrossFitters' levels of self-esteem and superiority, their levels of Instagram engagement, their levels of social comparison engagement, and the affects these levels have on self-esteem and superiority. This study offers the following hypotheses:

H1: Women CrossFitters have high levels of self-esteem leads to high levels of superiority.

H2: Women CrossFitters are less likely to engage in social comparison orientation.

H3: Women CrossFitters' high intensity and frequency on Instagram leads to high engagement.

H4: Women CrossFitters participate in high levels of Instagram intensity, frequency, and engagement.

H5: The more frequency, intensity and engagement women CrossFitters participate in, the more they engage in social comparison orientation.

H6: The greater women CrossFitters' Instagram intensity, frequency, and engagement, the higher their self-esteem and superiority.

H7: The more social comparison that occurs among women CrossFitters, the higher their levels of superiority.

CHAPTER 3: METHODOLOGY

Survey

Surveying is of the most frequently used methods in quantitative research. A survey is a method of collecting data typically through a questionnaire given to respondents as a self-administered or interviewer-administered form (Baxter & Babbie, 2004). Surveying is particularly useful when gathering data through structured questions. The survey method also allows the researcher to collect demographic data of the selected population. This research method provides a broad capability, which allows for a more accurate sample on which to make conclusions (Wyse, 2012).

The survey method is also dependable and allows participants to be open and honest, as answers remain anonymous. Such surveys tend to yield candid and valid responses (Wyse, 2012). By gathering rich quantitative data and forming empirical generalizations, the researcher can develop a theory that explains how women in CrossFit experience social comparisons when using Instagram. Because so many individuals use Instagram, it makes sense that they have experience using the site and engaging in social comparison.

To examine the proposed hypotheses, the researcher used a survey method to yield quantifiable data on Instagram users. Specifically, the use of the designated scales allowed the researcher to measure current self-esteem levels, social comparison levels, and social comparison on Instagram. Through the survey process, the hypotheses were examined.

Procedures

The study was conducted primarily in the greater Sacramento area during the spring of 2019. Data were collected using an online survey on Survey Monkey. The survey was 15 pages,

containing seven scales and a total of 72 questions. After gaining permission from gym owners, the researcher attended CrossFit classes during peak hours over a three-month period to promote the online survey. There were fliers with direct links to the survey, and peer-to-peer promotion was done as well. The researcher also contacted CrossFit gyms outside of the Sacramento area to expand the number of participants, as the direct Sacramento area did not yield enough participation.

Measurements

The survey was 15 pages and consisted of seven tested scales and a total of 72 questions. The scales included the Rosenberg Self-Esteem Scale (Self-Esteem), which assesses self-esteem and is a 10-point scale with a positive salience. It is rated on a 4-point Likert type scale (1 = *Strongly Agree*; 4= *Strongly Disagree*). The second scale was the Frequency of Facebook Scale (Frequency) (*a* = .85), which assesses the participation of multiple components of Facebook and is a 15-point scale with a positive salience that was adapted for Instagram. It is rated on a 5-point Likert type scale (1 = *Very Frequent*; 5= *Never*). The third scale was the Instagram Intensity Scale (Intensity) (*a* = .89), which assesses emotional connectedness and integration into a participant's daily activity of Instagram usage and is a 6-point scale with a positive salience. It is rated on a 4-point Likert type scale (1 = *Strongly Agree*; 4= *Strongly Disagree*). The fourth scale was the Social Comparison Orientation Scale (Comparison Orientation) (*a* = .83), which assesses how oriented participants engage in social comparison and is a 11-point scale with a negative salience. It is rated on a 4-point Likert type scale (1 = *Strongly Disagree*; 4= *Strongly Agree*). The fifth scale was the Social Comparison Scale (Comparison Self-Evaluation) (*a* = .90), which assesses participants' self-reflection of superiority and inferiority (Self-Evaluation) and is a 11-point scale with a negative salience. It is rated on a 10-point Likert type scale (1

=*Inferior*; 10= *Superior*). The sixth scale was the Engagement Scale (Engagement) (*a* = .83), which assesses participants' engagement in CrossFit-related Instagram usage and is a 6-point scale with a negative salience. It is rated on a 6-point Likert type scale (1 =*Never or Almost Never*; 6= *multiple times a day*). Finally, the last scale was the Demographics.

The research also provided measurements of dependent and independent variables to assess mean scores and standard deviation. The dependent variable, comparison self-evaluation, saw a mean score of 6.42 (SD 1.325). It is rated on a 10-point Likert type scale (1 =*Inferior*; 10= *Superior*). The independent variable one, self-esteem, saw a mean score of 1.66 (SD .419). It is rated on a 4-point Likert type scale (1 = *Strongly Agree*; 4= *Strongly Disagree*). The independent variable two, frequency, saw a mean score of 3.21 (SD .669). It is rated on a 5-point Likert type scale (1 = *Very Frequent*; 5= *Never*). The independent variable three, intensity, saw a mean score of 2.26 (SD .719). It is rated on a 4-point Likert type scale (1 = *Strongly Agree*; 4= *Strongly Disagree*). The independent variable four, comparison orientation, saw a mean score of 3.24 (SD .617). It is rated on a 4-point Likert type scale (1 = *Strongly Disagree*; 4= *Strongly Agree*). The final independent variable five, engagement, saw a mean score of 3.81 (SD 1.007). It is rated on a 6-point Likert type scale (1 =*Never or Almost Never*; 6= *multiple times a day*).

CHAPTER 4: RESULTS

This chapter explains the findings and provides a statistical analysis of the data. Based on these results, some important and useful information can be gathered in terms of understanding the population. These findings will later be evaluated and developed around the set hypotheses.

Demographic Information

Demographic background information was collected from the participants. The sample for this study consisted of women who participate in CrossFit and use Instagram in the Sacramento region (N = 270). The sample age range was 18-25, 25-35, 35-44, 45-54, and 55-64 (9.26%, 47.41%, 31.11%, 9.63%, and 2.59%) with 78% of the sample size being between the age of 25-44. The sample marital status range was single, married (legal or registered), married (traditional or unregistered), divorced, separated, widowed, and other (32.59%, 49.26%, 8.52%, 2.96%, .74%, .74%, 5.19%), with single and married (legal or registered) making up 81% of the sample. The sample highest education levels were high school, trade/vocational/technical school, some academic credits, associate degree, bachelor's degree, postgraduate diploma or BA honours, master's degree, professional degree, and doctorate degree (5%, 3%, 6%, 13%, 41%, 2%, 22%, 3%, 4%), with bachelor's degree, master's degree, and doctorate degree making up 67% of the sample. The sample annual income range was less than $20,000, $20,000-$29,999, $30,000-$39,999, $40,000-$49,999, $50,000-$59,999, $60,000-$69,000, $70,000-$79,999, and $80,000 or more (8.89%, 8.15%,7.78%,8.15%,9.26%,6.67%,10.00%, 41.11%), with $70,000-$79,999 and $80,000 and more being 51.11% of the sample.

When looking at the sample women CrossFit participation and Instagram usage, the results showed that participants' average time spent per week doing CrossFit was 6.5 hours (SD = 4.03) and their daily time spent doing CrossFit was 1.3 hours (SD= .913). The sample also showed that 54.44% of respondents actively competed in CrossFit while 45.56% did not compete. The sample showed that the average times per day checking Instagram was 8.3 times (SD= 15.58). In a one-week period, participants used Instagram 81 times on average (SD=79.01), and their average number of Instagram friends was 1009 (SD=81.81).

Reliability, Independent Variables, and Dependent Variables

All of the scales used in the study proved to be highly reliable. The Rosenberg Self-Esteem Scale, which measures self-esteem, produced a Cronbach's Alpha .818 across the 10 items in the scale. The Frequency of Instagram Scale, which measures the frequency use of Instagram, produced a Cronbach's Alpha of .884 across the 14-point items in the scale. The Instagram Intensity Scale, which measures the intensity at which a participant engages on Instagram, produced a Cronbach's Alpha .897 across the 6 items in the scale. The Social Comparison Orientation Scale, which compares orientation or the level at which comparison is done with the others, produced a Cronbach's Alpha .821 across the 11 items in the scale, which was reduced to a 9-item scale. The Social Comparison Scale, which measures self-evaluation, produced a Cronbach's Alpha .906 across the 11 items in the scale. Lastly, the Engagement Scale, which measures the levels of CrossFit-related Instagram engagement, produced a Cronbach's Alpha .830 across the 6 items in the scale.

Table 1
Cronbach's Alpha

Variables	Cronbach's Alpha	N of Items
Self-Esteem	.818	10
Frequency	.884	14
Intensity	.897	6
Comparison Orientation	.821	9
Comparison Self-Evaluation	.906	11
Engagement	.830	6

An issue arose when analyzing the reliability of comparison orientation. Initially, the report showed a Cronbach's Alpha score of .614. This is not reliable enough to provide generalizable results from the data collected on that variable. When the individual items of the 11-item scale were examined in relation to one another, there were two problematic items. The first item reads, "I am not the type of person who compares often with others." The second item reads, "I never consider my situation in life relative to that of other people." The first and second items had a negative valance while the rest of the scale had a positive valance. Each of the scales in the survey used a similar style of questions and answers. Each of the scales used number "1" to denote a "strongly disagree" response and a "5" to denote a "strongly agree" response. The questions were phrased in a reverse format, and this may have contributed to some confusion among the respondents. Due to the ambiguity of the scale, the two questions were dropped, and the Cronbach's Alpha score rose to .821.

Table 2 and Table 2.2 show descriptive statistics for the independent and dependent variables in the proposed hypotheses. The mean score for comparison self-evaluation (Table 2)

was M 6.42 , and the standard deviation was 1.325. The mean score for the independent variables (Table 2.2) included self-esteem (M 1.66), followed by frequency (M 3.21), intensity (M 2.26), comparison orientation (M 3.24), and engagement (M 3.24). Standard deviations were reported for self-esteem (SD .419), followed by frequency (SD .419), intensity (SD .719), comparison orientation (SD .617), and engagement (SD 1.077).

Table 2
Descriptive Statistics for Dependent Variables

Dependent Variable	**M**	**SD**	**N**
Comparison Self-Evaluation	6.42	1.325	270

Table 2.2
Descriptive Statistics for Independent Variables

Independent Variable	**M**	**SD**	**N**
Self-Esteem	1.66	.419	270
Frequency	3.21	.669	270
Intensity	2.26	.719	270
Comparison Orientation	3.24	.617	270
Engagement	3.81	1.077	270

Correlation Analysis

A correlation analysis was run to explore the relationships between the variables proposed in the hypotheses. Table 3 shows a correlation matrix of the bivariate correlations between self-esteem, frequency, intensity, social comparison orientation, comparison self-

evaluation, and engagement. Table 3.2 shows a correlation matrix of the bivariate correlation's description. Table 3.3 shows the correlation analysis of independent variables on the dependent variable, social comparison self-evaluation.

Table 3
Statistically Significant Correlations

Description	**r**	**p**
Self-esteem has a significant moderate negative correlation with comparison orientation	r = -.321	P<0.01
Self-esteem has a significant moderate to strong positive correlation with comparison self-evaluation	r = .574	P<0.01
Self-esteem has a significant weak positive correlation with engagement	r = .192	P<0.01
Frequency has a significant strong positive correlation with intensity	r = .659	P<0.01
Frequency has a significant moderate to strong positive correlation with engagement	r = .526	P<0.01
Intensity has a significant weak positive correlation with comparison orientation	r = .228	P<0.01
Intensity has a significant weak negative correlation with comparison self-evaluation	r =- .132	P<0.05
Intensity has a significant moderate to strong positive correlation with engagement	r = .507	P<0.01
Comparison orientation had a significant weak negative correlation with Comparison self-evaluation	r = -.198	P<0.01
Comparison self-evaluation has a significant weak positive correlation with engagement	r = .213	P<0.01

Table 3.2
Statistically Significant Correlations Description

Description	**r**	**p**
The higher someone's self-esteem, the less likely they are to engage in social comparison orientation.	r = -.321	P<0.01
The higher someone's self-esteem, the more likely they are to feel superior or better to others.	r = .574	P<0.01
The lower someone's self-esteem, the less they engage in CrossFit related content.	r = .192	P<0.01
The more someone participates in frequency, the more they engage in intensity.	r = .659	P<0.01
The more frequently someone used Instagram, the more likely they were to engage in CrossFit related Instagram content.	r = .526	P<0.01
The less intensity someone engaged on Instagram, the less likely they were to engage in social comparison orientation.	r = .228	P<0.01
The more superior someone felt about themself the more likely they were to have intensity while using Instagram.	r = -.132	P<0.05
The higher intensity someone engaged on Instagram, the more likely they were to engage in CrossFit related Instagram.	r = .507	P<0.01
The more superior someone felt, the less they were to engage in social comparison orientation.	r = -.198	P<0.01
The more superior someone felt, the more likely they were to engage in CrossFit related Instagram.	r = .213	P<0.01

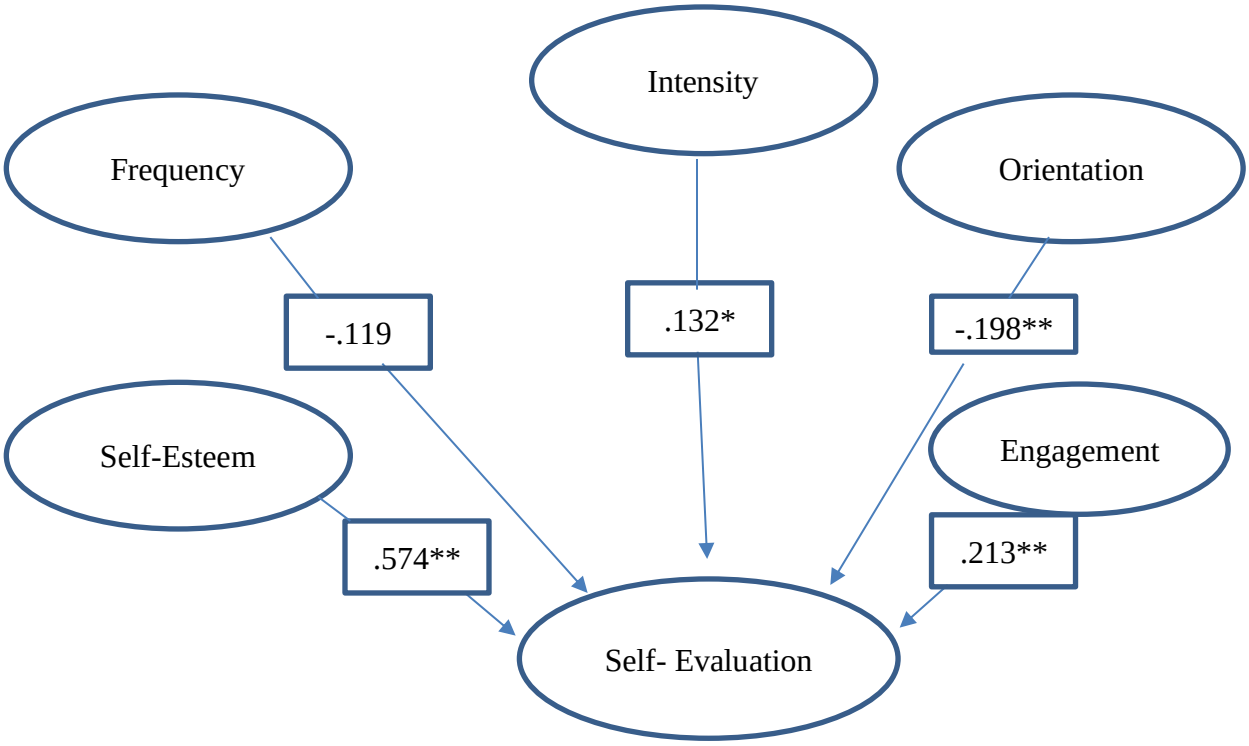

Figure 1. Correlation Analysis of independent variables on social comparison (self-evaluation)
** Correlation is signification at the .01 level (2-Tailed)

Table 3.3

Variables	M	SD	a	1	2	3	4	5	6
1. Self-Esteem	1.6	.41	.81	(-)	.064	.092	-.321**	.574**	.192**
2. Frequency	3.2	.66	.88		(-)	.659**	-.082	-.119	.526**
3. Intensity	2.2	.71	.89			(-)	.228**	.132*.	.507**
4. Orientation	3.2	.61	.82				(-)	-198**	.037
5. Self-Evaluation	6.4	1.32	.90					(-)	.213*
6. Engagement	3.8	1.07	.83						(-)

** Correlation is Significant, p<.01
* Correlation is Significant, p<.05

The correlations in the data support the hypotheses in the study. Hypothesis 1 states, *"Women CrossFitters have high levels of self-esteem leads to high levels of superiority."* This hypothesis is answered by the correlations. More concretely, self-esteem saw a median score of 1.66 (SD .419), social comparison self-evaluation saw a median score of 6.42 (SD 1.325), and

self-esteem with social comparison self-evaluation saw a significant moderate to strong positive correlation (r=.574 P<0.01). Hypothesis 2 stated, *"Women CrossFitters are less likely to engage in social comparisons orientation."* This hypothesis is answered by the correlations. More concretely, self-esteem saw a median score of 1.66 (SD .419), and self-esteem with social comparison orientation saw a significant moderate negative correlation (r=-.321 P<0.01). Hypothesis 3 stated, *"Women CrossFitters' high intensity and frequency on Instagram leads to high engagement."* This hypothesis is answered by the correlations. More concretely, frequency with intensity saw a significant strong positive correlation (r=.659 P<0.01), intensity with engagement saw a significant moderate to strong positive correlation (r=.507 P<0.01), and frequency with engagement saw a significant moderate to strong positive correlation (r= .526 P<0.01). Hypothesis 4 stated, *"Women CrossFitters participate in high levels of Instagram intensity, frequency, and engagement."* This hypothesis is answered by the correlations. More concretely, intensity saw a median score of 2.26 (SD .719), frequency saw a median score of 3.21 (SD .669), and engagement saw a median score of 3.81(SD 1.077). Hypothesis 5 stated, *"The more frequency, intensity and engagement women CrossFitters participate in, the more they engage in social comparison orientation."* This hypothesis is answered by the correlations. More concretely, social comparison orientation saw a median score of 3.24 (SD .617), social comparison orientation with intensity saw a significant weak positive correlation (r=.228 P<.01), social comparison orientation with frequency saw no significant correlation (r=-.082), and social comparison orientation with engagement saw no significant correlation (r=.037). Hypothesis 6 stated, *"The greater women Crossfitters' Instagram intensity, frequency, and engagement, the higher their self-esteem and superiority."* This hypothesis is answered by the correlations. More concretely, intensity saw a median score of 2.26.42 (SD 7.19), frequency saw a median score of

3.21 (SD .669), engagement saw a median score of 3.81 (SD 1.077), intensity with social comparison self-evaluation saw a significant weak negative correlation (r=-.132 P<0.05), frequency with social comparison self-evaluation saw no significant correlation (r=-.119), engagement with social comparison self-evaluation saw a significant weak positive correlation (r= .213 P<0.01), intensity with self-esteem saw no significant weak positive correlation (r=.092), frequency with self-esteem saw no significant correlation (r=.064), and engagement with self-esteem t saw a significant weak positive correlation (r=.192 P<0.01). Hypothesis 7 stated, *"The more social comparison that occurs among women CrossFitters, the higher their levels of superiority."* This hypothesis is answered by the correlations. More concretely, social comparison orientation saw a median score of 3.24 (SD .617), social comparison self-evaluation saw a median score of 6.42 (SD 1.325), and social comparison self-evaluation with social comparison orientation saw a significant weak negative correlation (r=-.198 P<0.01).

CHAPTER 5: DISCUSSION

Implications of the Study

There are important outcomes from this study and intriguing implications to which the data point. In order to understand the results of this study, the scales and proposed hypotheses will be discussed alongside the data. The aim was to gain insight into women CrossFitters, including how women CrossFitters use Instagram as a medium for social comparison, and how both affect self-esteem. Some of the initial findings showed high reliability with the scales. The data also showed, on average, that women CrossFitters were highly educated and earned higher salaries than the general population. Next, the majority of participants not only identified as engaging in CrossFit six times a week, but also identified as active competitors in CrossFit. The data would reveal additional information about women CrossFit participation, Instagram usage, and social comparison.

In order to gain insight into women CrossFitters, Instagram usage, and social comparisons, there were 7 hypotheses developed. The difficulties of 7 hypotheses were that each hypothesis had multiple findings that, in the end, did not always show the full picture. As an attempt to simplify the findings they were clustered into four key findings. These four key findings better exemplified the aim of the study and provided insight into the research group.

Key Finding 1 used Hypothesis 1 with a hope of gaining insight into the current state of self-esteem and superiority of the research group. The data support that women CrossFitters have a mean score that shows a moderate to high level of self-esteem and a moderate to high level of superiority. The data also showed that the higher their self-esteem, the more likely they were to feel superior to others.

Key Finding two used Hypothesis 1, Hypothesis 2, and Hypothesis 5 with an aim to gain insight into social comparison engagement. The data support that women CrossFitters have a mean score that shows a moderate to high level of self-esteem and a moderate to high level of superiority, and a moderate to high level of social comparison orientation. The data showed that the higher their self-esteem, the less inclined they were to engage in social comparison orientation. It also showed that the more social comparison orientation that happened, the more inferior they felt. Overall, the data showed that the subject group had a moderate to highly likelihood they would engage in social comparison orientation.

Key Finding three used Hypothesis 3 and Hypothesis 4, which gave sight into Instagram engagement. The data support that women CrossFitters have a mean score that shows moderate to high levels of Instagram intensity, moderate to low levels of frequency, and moderate levels of engagement. More so, the greater the frequency, the higher CrossFit- Related Instagram content was engaged with. Also, the greater the Intensity, the higher the CrossFit- Related Instagram content engagement. Lastly, the higher frequency the higher the intensity. Overall, the data showed that women CrossFitters have a moderate and often high Instagram engagement.

Key Finding four used Hypothesis 3 and Hypothesis 6, which gave sight into Instagram usage and its effects on self-esteem and superiority. The data support that women CrossFitters have a mean score that shows moderate to high levels of Instagram intensity, moderate to low levels of frequency, and moderate levels of engagement. The data showed that the more Instagram intensity the higher an individual's superiority, the more CrossFit related engagement the higher their superiority, but frequency and social comparison self-evaluation saw no significant correlations. Next, the more engagement the higher their self-esteem, but Intensity with self-esteem saw no significant correlations and frequency with self-esteem saw no

significant correlations. Overall, the subject group had mixed results when looking at superiority and self-esteem through the lens of overall Instagram engagement.

Limitations and Future Research

This study has a few limitations that should be taken into consideration. There are a few factors that could have contributed to the final sample size. There were 430 attempted surveys with an 83% completion rate, which is 357 completed surveys. With 357 completed surveys, approximately 25% had errors, which made them unusable. In total, only 270 surveys were used for data analysis. The first issue with only having 270 usable surveys is that although the survey amount does meet the standard for conducting research as a graduate student it does not meet the traditional standards of having 400- 500 surveys to meet significant standards. In the future it would be better to reach the 400-500 threshold to insure accurate results. The next issue with 38% of the surveys having issues was the length of the survey seemed to be a contributor to the completion rate, as survey errors occurred in the last third of the survey. Another possible contributor could have been the data collection process. The researcher attended local facilities to promote the survey, but then the participants took the survey alone and without guidance, and this could have contributed to some confusion about the survey. Another consideration is that the study did not use simple random sampling. The research was conducted in the Sacramento area, which only represents one area.

Survey collection and contact could have been solely conducted online. By doing so, there would have been an opportunity to reach a much larger sample group outside of the Sacramento region. Although the current assumption is that there would be similar findings within the United States, it is possible there could have been some variance outside of the country, and this would have allowed for more significant insights.

The Social Comparison Orientation Scale had reliability issues that could have been resolved through the rewording of the survey questions. The questions were phrased in a reverse format, and this may have contributed to some confusion among the respondents. Another possible solution would have been to eliminate the questions from the survey all together. Initially, the report showed a Cronbach's Alpha score of .614, but with these adjustments, we could have seen a Cronbach Alpha of .821 or higher. Due to the ambiguity of the scale, the two questions were dropped, and the Cronbach's Alpha score rose to .821.

Another limitation and possibility for future research is that there could have been an opportunity to survey both traditional gym participants and CrossFit participants. This would provide the ability to compare the two groups. The comparison would allow for a deeper insight into the differences between the two groups, as they pertain to Instagram engagement, self-esteem, and social comparison. When examining social comparison between the two groups, there would have been an opportunity to establish baseline levels of self-esteem by assessing naturalistic comparison in the gym before participants engaged in social comparison on Instagram. A significant limitation was that there were very few examples upon which to base the research structure. If previous studies existed from which to work, there would have been a greater ability to draft the survey and a better method for the survey collection process. Another significant limitation is that no upward or downward comparison scales were used. Although I was able to gain insight into social comparison, I was never able to truly establish if the sample group was comparing upward or downward and how this was affecting women CrossFitters' self-esteem.

There was also an opportunity to measure upward and downward social comparison habits, which were not addressed in this research. Although some assumptions could have been

made about upward and downward social comparison habits due to social comparison self-evaluation with social comparison orientation and levels of superiority, it would have been more diligent to have a separate survey that addressed these concepts. Addressing these concepts could have allowed for deeper insight into the fitness components but more so the engagement process through Instagram and the effects of self-esteem.

When looking at opportunities for future research, I would like to perform qualitative research on this topic. Conducting in-person interviews and observations could provide richer insight into the interworking of the CrossFit and Instagram communities, the social developments of the participants, and their engagement on social media from a first-hand perspective. These additions could add depth to the quantitative research conducted in this study, which would expand the results of this research.

Table 4
4 Key Findings, Hypotheses, and Findings

4 Key Take Always	**Hypotheses and Findings**
KT 1: The subject group had moderate to high self-esteem and superiority and the higher their self-esteem the more likely they are to feel superior	H1: 1. Moderate to high level of self-esteem 2. Moderate to high level of superiority 3. Higher their self-esteem, the more likely they are to feel superior
KT 2: The subject group had a moderately to highly likelihood they would engage in social comparison (orientation).	H2, H7, and H5/ H1. 1. Moderate to high level of self-esteem* (From H1) 2. Moderate to high level of superiority * (From H1) 3. Moderate to high level of social comparison orientation 4. Higher their self-esteem the less inclined to engage in social comparison (orientation) 5. More social comparison orientation, Higher inferior
KT 3: Moderate and often high overall Instagram engagement	H3 & H4: 1. Moderate to high levels of Instagram intensity 2. Moderate to low levels of frequency 3. Moderate levels of engagement 4. Greater the frequency higher CrossFit-Related Instagram content engagement 5. Greater the Intensity higher CrossFit- Related Instagram content engagement 6. Higher frequency, higher intensity
KT 4: The subject group had mixed results when looking at superiority and self-esteem through the lens of overall Instagram engagement.	H6/H3: 1. Moderate to low frequency (From H3) 2. Moderate to high engagement (From H3) 3. Moderate to high intensity (From H3) 4. More intensity, the higher superiority 5. More engagement, higher their superiority 6. Frequency and social comparison self-evaluation: no significant correlations 7. More engagement higher their self-esteem 8. Intensity with self-esteem: no significant correlations 9. Frequency with self-esteem: no significant correlations

Conclusion

This study sought to gain insight into women CrossFitters, Instagram, and the mediating effects of social comparison on self-esteem. After analyzing the data collected, there are some clear correlations in the results. This study resulted in numerous highly significant findings and provides insight into the CrossFit community, women CrossFitters' Instagram engagement, social comparison, and self-esteem, but we must continue to attempt to better understand the relationships between social comparison, Instagram usage, and women who participate in CrossFit. Future research related to these fields could possibly being to tackle issues revolving around low self-esteem. The research in this study demonstrates the evolving landscape of the fitness industry and social media, which requires the constant revisiting of communication variables and the exploration of new measures to help understand the changes occurring.

This study offers new insights into research that encourage the consideration of important aspects regarding the ways communication is understood, how social comparison in evolving, and how self-esteem can be understood. This study provides findings for communication research that allow for future research. The idea of social comparison through the use of social media platforms and how this affects the fitness industry may need to be considered more fully. Most importantly, this study attempted to gain insight into gender roles, their effects of self-esteem and how Instagram contributes to the ever-growing concern of women mental and physical wellbeing. This one study is not the answer to these problems, but it was a significant starting point

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APPENDIX A: SURVEY

CrossFit, Instagram, and Social Comparison

Statement of Informed Consent

You are being asked to participate as a volunteer in a research study conducted by **Michael A. Contreras**, a graduate student at the University of the Pacific. This study is designed to gather information data on Instagram usage and Social Comparison. The research is being conducted under the supervision of Dr. Dong, Dr. Bergman, and Dr. Turpin.

You will be one of approximately 250 *Crossfitters who* participating in this study by completing this questionnaire.

1. Your participation in this project is voluntary; you will not be paid for your participation. You may withdraw from the study at any time without penalty or harm of any type. If you decline to participate in or choose to not complete the questionnaire, the researcher will not inform anyone of your decision, and no foreseeable negative consequences will result.
2. Completing the questionnaire will require approximately 10 minutes. There are no known risks associated with completing the questionnaire. If, however, you feel uncomfortable in any way during this process, you may decline to answer any question, or not complete the questionnaire.
3. The researcher will not identify you by name in any report using information obtained from your questionnaire; your confidentiality as a participant in this study will remain secure. Subsequent uses of data generated by this questionnaire will protect the anonymity of all individuals.
4. This research effort and this questionnaire have been reviewed and approved by the Thesis Proposal Review Board as well as the Institutional Review Board for ethical research at the University of the Pacific. For research-related problems or questions regarding ethical research practices, please contact Michael Contreras at m_contreras5@u.pacific.edu

NOTE: By completing and submitting this questionnaire, you are indicating that you understand the statements above, and consent to participate in this study. **Do not put your name on the questionnaire**.

Part A. Below is a series of questions that measure *global self-worth*. There are no right or wrong answers. Please record your first impression by indicating the degree to which you agree or disagree with the statement. There are four different choices per questions, please check the answer that best represents how you feel. Thank you.

1. On the whole, I am satisfied with myself.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

2. At times I think I am good at all.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

3. I feel that I have a number of good qualities.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

4. I am able to do things as well as most other people.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

5. I feel I do not have much to be proud of.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

6. I certainly feel useless at times.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

7. I feel that I'm a person of worth, at least on an equal plane with others.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

8. I wish I could have more respect for myself.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

9. All in all, I am inclined to feel that I am a failure.

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

10. I take a positive attitude toward myself

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

PLEASE GO TO NEXT PAGE

Part B. Below is a series of questions that measure *Instagram frequency*. There are no right or wrong answers. Please record your first impression by indicating the degree to which each statement pertains to you. There are five different choices per questions, please check the answer that best represents how you feel. Thank you.

How frequently do you perform the following activities when you are on *Instagram*? Please place a check mark in the box that best represent your answer for each question. (Note: Choosing "Very Frequently" Mean s that about 100% of the time that you log onto Instagram, you perform that action)

1. Play Games

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

2. Posting Status updates

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

3. Sharing links

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

4. Sending private messages

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

5. Commenting (on statuses, wall posts, pictures, etc.)

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

6. Commenting (on statuses, wall posts, pictures, etc.)

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

7. Chatting on private message

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

8. Checking to see what someone is up to

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

9. Creating or RSVPing to events

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

10. Posting photos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

11. Tagging photos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

12. Viewing photos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

13. Posting videos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

14. Tagging videos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

15. Viewing Videos

Very Frequently (100%)	Somewhat Frequently (75%)	Sometimes (50%)	Rarely (25%)	Never (0%)

PLEASE GO TO NEXT PAGE

Part C. Below is a series of questions that measure *Instagram intensity*. There are no right or wrong answers. Please record your first impression by indicating the degree to which you agree or disagree with the statement. There are four different choices per questions, please check the answer that best represents how you feel. Thank you.

1. Instagram is part of my everyday activity

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

2. I am proud to tell people I'm on Instagram

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

3. Instagram has become part of my daily routine

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

4. I feel out of touch when I haven't logged onto Instagram for a while

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

5. I feel I am part of the Instagram community

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

6. I would be sorry if Instagram shut down

Strongly Agree **Agree** **Disagree** **Strongly Disagree**

PLEASE GO TO NEXT PAGE

Part D. Below is a series of questions that measure social comparisons orientation. There are no right or wrong answers. Please record your first impression by indicating the degree to which you agree or disagree with the statement. **There are four different choices per questions, please check the answer that best represents how you feel.** *Note: Answers are from negative to positive.* ***Thank you.***

1.I often compare myself with others with respect to what I have accomplished in life.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

2. If I want to learn more about something, I try to find out what others think about it.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

3. I always pay a lot of attention to how I do things compared with how others do things.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

5. I always like to know what others in a similar situation would do.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

6.I am not the type of person who compares often with others.

Disagree Strongly	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Agree Strongly**

7.If I want to find out how well I have done something, I compare what I have done with how others have done.

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly

8. I often try to find out what others think who face similar problems as I face.

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly

9. I often like to talk with others about mutual opinions and experiences.

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly

10. I never consider my situation in life relative to that of other people.

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly

11. I often compare how I am doing socially (e.g., social skills, popularity) with other people.

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly

PLEASE GO TO NEXT PAGE

Part E. Below is a series of questions that measure *social comparison*. There are no right or wrong answers. Please record your first impression by circling the number that best represents you. . There are ten different choices per questions, please check the answer that best represents how you feel. Note: The number 5 is located in the middle and is to be used if you choose to be in the middle of both answers. Thank you.

MEASURE OF SOCIAL COMPARISON

In relationship to others I feel:

Inferior	1	2	3	4	**5**	6	7	8	9	10	**Superior**
Incompetent	1	2	3	4	**5**	6	7	8	9	10	**More competent**
Unlikeable	1	2	3	4	**5**	6	7	8	9	10	**More likeable**
Left out	1	2	3	4	**5**	6	7	8	9	10	**Accepted**
Different	1	2	3	4	**5**	6	7	8	9	10	**Same**
Untalented	1	2	3	4	**5**	6	7	8	9	10	**More talented**
Weaker	1	2	3	4	**5**	6	7	8	9	10	**Stronger**
Unconfident	1	2	3	4	**5**	6	7	8	9	10	**More confident**
Undesirable	1	2	3	4	**5**	6	7	8	9	10	**More desirable**
Unattractive	1	2	3	4	**5**	6	7	8	9	10	**More attractive**
An outsider	1	2	3	4	**5**	6	7	8	9	10	**An insider**

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Part F. Below is a series of questions that measure *CrossFit related content engagement.* There are no right or wrong answers. Please record your first impression that best represents your involvement with CrossFit. There are six different choices per questions; please check the answer that best represents how you feel. Thank you.

1. How often do you CrossFit?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

1. How often do you post about CrossFit on Instagram?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

2. How often do you comment on other crossfitters' Profiles?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

3. How often do you like other crossfitters' Profiles?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

4. How often do you look at crossfitters profiles that are better then you at CrossFit?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

5. How often do you look at crossfitters profiles that are worst then you at CrossFit?

Never or almost never	Once a year	Once a month	Once a week	Once a day	Multiple times a day

PLEASE GO TO NEXT PAGE

Part G. Below is a series of questions that measure basic *demographic information*. There are no right or wrong answers. Please record your first impression that represents who you are and fill in any necessary sections. Thank you.

Demographics:

1. What is your age?

- ☐ Under 25 years of age
- ☐ 25–34 years of age
- ☐ 35–44 years of age
- ☐ 45–54 years of age
- ☐ 55–64 years of age
- ☐ 65–74 years of age
- ☐ 75 years of age or older

3. What is your current marital status?

- ☐ Single
- ☐ Married (legal or registered)
- ☐ Married (traditional or unregistered)
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ Other: _____ [explain]

4. What is your current annual income? **?**

- ☐ Less than $20,000
- ☐ $20,000 to $29,999
- ☐ $30,000 to $39,999
- ☐ $40,000 to $49,999
- ☐ $50,000 to $59,999
- ☐ $60,000 to $69,999
- ☐ $70,000 to $79,999
- ☐ $80,000 or more

5. Do you compete in CrossFit ? (Circle one)

1. Yes

2. No

6. What percentage of your Instagram following is Peer Based (People you know in real life) vs. Instagram Celebrities ? **(Circle one)**

A. 25% Peer Based B. 50% Peer Based C. 75% Peer Based. D. 100% Peer Based

7. Of the celebrities you follow on Instagram what percentage are Social Media Celebrates vs. Commercial Celebrities (Movies, TV, Theater, Music)?

A. 25% Social Media B. 50% Social Media C. 75% Social Media D. 100% Social Media

8. Approximately how many hours per week do you spend on CrossFit?

Answer here:_____

9. Instagram: Average hours spent daily_____
Or Average minutes spent daily_____

10. On average how many times per day do you check your Instagram?

Answer here:_____

11. Approximately how many TOTAL Instagram friends do you have?

Answer here:_____

12. The past week, on average, approximately how much time PER DAY have you spent actively using Instagram?

Answer here:_____

13. Please indicate how many months you have participated in crossfit and if you have competed which level (Open, Regional, Games) did you make it to.

Answer here:_____

Thank you very much for your participation in this survey

APPENDIX B: IRB FORM

Purpose: This Application is designed to help you apply for IRB approval for research involving human subjects and to ensure that the IRB receives the appropriate information to make a determination.

Before you fill out this form:

- Review the IRB Manual.
- Complete the CITI training. Training is required for all individuals involved in data collection and analysis on this protocol. Training is also required for student advisors.

YOU MAY NOT CONDUCT RESEARCH ACTIVITIES INVOLVING HUMAN SUBJECTS WITHOUT IRB APPROVAL.

Instructions: Complete the application thoroughly. All pages must be completed. Incomplete submissions will be returned and will result in the delay of your study being reviewed. Explain your research as you would to a peer who is not an expert in your field, avoid jargon and acronyms. All information pertinent to your research must be included in the Application itself and your research must be understood without the supplemental attachments. Do not rely on information presented in attachments. Submit completed application and required attachments to irb@pacific.edu.

Submission Checklist: The last page of this Application includes a submission checklist. Please use the checklist to confirm all required documents are submitted with this Application.

Signatures: Obtain all signatures prior to submitting to the IRB Administrator. A Faculty Advisor signature is required if the student is the principal investigator.

If you have any questions, please contact the IRB Administrator at: vandeola@pacific.edu or 209.946.7716.

FOR IRB OFFICE USE ONLY:			
IRB Protocol Review Number:		**Date Received:**	
☐ Approved ☐ Conditionally Approved (*See IRB Approval Letter*) ☐ Disapproved (*Activity is considered Human Subjects Research and Requires IRB Approval*) ☐ No Determination (*Activity is not research or does not involve human subjects. IRB Approval not required.*) ☐ Exempt Review: Category _____ ☐ Expedited Review: Category _____ ☐ Full Review ☐ Limited Review Required			
IRB Co-Chair Approval:		**Date Approval Letter Sent:**	
Approval Date:			

REQUIRED RESEARCHER CONTACT INFORMATION:			
Lead Researcher/ Principal Investigator (PI):	Michael Anthony Contreras	**PI University Email:**	M_contreras5@u.pacific.edu
College/School:	University of the Pacific	**PI Telephone:**	209.380.6390
Department:	Communication		
PI Status:	☒ Student ☐ Faculty ☐ Administrator ☐ Other: _____	**Expected Graduation Date:** (*If Student*)	Fall; December 2018
Date CITI Training was Completed by PI:	12/13/2016	**Date CITI Training was Completed by Faculty Advisor:**	January 2017
Faculty Advisor (required for Student Research):	Qingwen Dong	**Faculty Advisor Email:**	qdong@pacific.edu
Faculty Advisor Department:	Communication		
Research/Activity Title:	CROSSFIT, SOCIAL COMPARISON, AND INSTAGRAM		
Expected Start Date of Research Activities:	03/31/18	**Expected Duration** *(In year format, i.e. one year, two years. etc.):*	3 year
Has this Research Been Reviewed by Another Institutional Review Board?	☐ Yes ☒ No (if yes, Stop completing this Application and contact the IRB Administrator to determine whether a Cooperative Agreement is possible.)		
Project Support	☐ Funded ☒ Unfunded	**If Funded, list source:**	
Any Conflict of Interest Between Funding Source and the PI?	☐ Yes ☒ No (Refer to the University's Conflict of Interest Policy)	**If Yes, Describe:**	
List Names of Members of the Research Team/Additional Personnel *(only list if personnel will have interaction with subjects or access to identifiable data. - attach separate sheet/document if needed)*	(Name, Department/School, CITI Training Completion Date, Role in Research Activities) Qingwen Dong, Communication, College of the Pacific, January 2017, Chair of thesis		

Assurances, Signatures and Certification / Researcher Responsibilities

LEAD RESEARCHER/PRINCIPAL INVESTIGATOR

In submitting this proposed research project and signing below, I certify that:

1. I have read and understand the IRB Manual regarding research involving human subjects.
2. I will conduct the research involving human subjects as presented in this Application and approved by my faculty advisor (if applicable), and the IRB.
3. I will present any proposed modifications of the research activities to the IRB for approval prior to implementation.
4. All conflicts of interest, if any, between myself and any funding agencies have been resolved to the satisfaction of the University's Office of Sponsored Programs.
5. All data/specimens were/are collected in an appropriate and ethical manner.
6. I will report to the IRB any problems that occur to subjects related to the research activities.

_____ Date: _____

Signature of Lead Researcher

FACULTY ADVISOR (IF LEAD RESEARCHER/PI IS A STUDENT):

My signature below verifies that:

1. I will provide continued supervision and guidance to the student during the course of this student's research project, as appropriate.
2. I confirm that I am responsible for working with the student researcher to ensure that this research is performed in an ethical manner that complies with federal regulations and University policies regarding research involving human subjects.
3. I have reviewed and concur with this research application, including the purpose, design, methodology, procedures, subjects and the provided description of risks and benefits.
4. I will assist the student and the IRB as requested if any problems develop with the research.
5. If I will be unavailable (such as during a sabbatical leave or vacation), I will arrange for an alternate faculty advisor to assume responsibility during my absence.

_____ Date: _____

Signature of Faculty Advisor
Typed Name:
Email:

A.1. PURPOSE AND OBJECTIVES OF THE RESEARCH.
Please explain the purpose and objectives of the research. Attach additional pages as needed.

The purpose and objective of this study is to explore and measure the effect of Instagram use and social comparison among women who participate in Crossfit as it relates to their self-esteem.

A.2. CONTRIBUTION TO, OR DEVELOPMENT OF, GENERALIZABLE KNOWLEDGE.
Please explain how the research will contribute to, or help develop, generalizable knowledge.

The emergence of Crossfit has resulted in a significant shift in gender norms for women in the fitness industry. Through the development of social networking sites individuals are better able to and more frequently able to compare themselves to others on social media. The researcher will examine women crossfitters to determine how they are socially compare on Instagram.

B. DESCRIPTION OF SUBJECT POPULATION(S)

B.1. Who are the subject groups and how will they be recruited?	The study will be conducted primarily in the greater Sacramento area. The researcher will attend fitness classes at local crossfit boxes during peak hours to promote the online survey for no longer than 1 month. The research will also contact CrossFit gyms outside of the Sacramento area to expand the number of participants. Participants will be women 18 years of age or older who have done crossfit for 6 months or more and use Instagram.
B.2. What is the maximum number of subjects you will enroll?	250
B.3. Are you recruiting for subjects?	☒ Yes (*If yes, include a copy of any recruitment materials (e.g., flyer, email, text, verbal recruitment script.*) ☐ No

B.4. Indicate how the participants will be recruited (select all that apply):

☐ Email	☐ Online
☐ Flyer	☐ Telephone
☒ In Person	☐ Mail

☐ Database or record review ☐ Other:	☐ Marketing Pool ☐ N/A Existing Data/Specimen (*no contact with subjects*)
B.5. What are the criteria for selection and/or exclusion of subjects?	Subject must be a women 18 or older who has done crossfit uses Instagram.
B.6. Does this study include minors?	☐ Yes - *If Yes, state minimum and maximum ages:* ☒ No
B.7. Does this study include adults?	☒ Yes - *If Yes, state minimum and maximum ages:* 18 - 100 ☐ No
B.8. Will all research be conducted in English?	☒ Yes ☐ No – *If No, what language(s) will be used:* (*Note: All applicable research materials need to be submitted in the language being used with the participants (unless no written version exists), along with English translations/script. The name of the translator and a statement about the translator's qualifications must be provided with this IRB Research Application*.)
B.9. Where will research activities involving subjects occur? (e.*g., Stockton campus, specific address, [City, Country], etc*.)	In the Sacramento County at local Crossfit Boxes
B.10. If any vulnerable populations are being used, please justify. (See page 68, XV. in IRB Manual for description of vulnerable populations.)	NA

C. RESEARCH ACTIVITIES INVOLVING HUMAN SUBJECTS
C.1. Describe the research activities involving each subject group described in Section B. Include the expected amount of time subjects will be involved in each activity. *Attach the methodology section of your grant proposal, dissertation or thesis if applicable*.
The study will be conducted primarily in the greater Sacramento area. Data collection will be conducted using an online survey on Survey Monkey. The participants will take the survey in the confines of their own space at a time of their choosing. The survey will take approximately 30 minutes to do.
C.2. How will the information/biospecimen be collected from subjects? Check all that apply. ☒ Questionnaires (attach a copy) ☐ Interviews (attach a list of questions) ☐ Observances (briefly describe below

☐ Standardized tests (list names of tests ***and*** attach copy of each test)

☐ Other:

D. INFORMATION/BIOSPECIMENS

D.1. How will the information/biospecimens be recorded (e.g., notes, tapes, computer files, completed questionnaires, tests, etc.)?

D.1	They will write their answers in the questionnaire

D.2. Will medical records or other patient data be accessed? Refer to the IRB Manual (page 62, Section XIII) for more information on HIPAA regulations and a sample HIPAA authorization.

Yes: ☐ No: ☒	*If Yes, complete the HIPAA Questionnaire and provide a copy of the HIPAA Authorization Form that will be used to obtain subjects' authorization.*

D.3. Who will have access to the gathered data/specimens, and how will confidentiality be maintained *during* the study, *after* the study, and *in reporting* the results?

D.3	Only Qingwen Dong and myself will have access to the material. Questioners do not allow for personal identifiers.

D.4. What are the plans for the information/biospecimens after the completion of this study (publication/presentation) and how and when will the information/biospecimens be maintained during the retention period (see page 77, Section XVII of the IRB Manual for more information). Describe method(s) of destroying the data, including any audio/visual recordings.

D.4.	Once the research is done, the researcher will write a paper for his MA thesis discussing social correlations and statistically relevant information found on SPSS. Data will be locked in a safe for 3 years then destroyed after 3 years

E. BENEFITS, RISKS, and COSTS

E.1. ***Minimal risk*** means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. See IRB Manual for more information on assessing the risk to subjects.

In the Principal Investigator's opinion, this research presents:

☒ **No greater than minimal risk, or** ☐ **Greater than minimal risk.**

Please select all that apply and explain below:

☐ **Physical**

E. BENEFITS, RISKS, and COSTS	
☐ **Psychological** (*emotional, behavioral, including anxiety, etc*.) ☐ **Sociological** (*embarrassment, loss of respect of others, labeling a subject in a way that will have negative consequences*) ☐ **Loss of Confidentiality** (*All research will have at least "minimal" risk of loss of confidentiality where research data is recorded. The risk is only not applicable when you send anonymous surveys in a non-public setting with non-sensitive subjects that cannot be identified with the subjects; or when using existing de-identified data/specimens*.) ☐ **Criminal or Civil Liability** ☐ **Deception** ☐ **Economic** ☐ **Other - Please explain**.	
E.1.1	NA
E.2. What safeguards will you use to eliminate or minimize each of the risks described in E.1 above? If subjects experience adverse reactions, how will they be managed?	
E.2.	The participants will not need to write their names or any other personal identifier. Therefore, the data will be anonymous. The questions are not be invasive and is about general fitness and social media opinions. Participants also have the option to opt-out of answering the questions at any time.
E.3. If applicable, what are the costs to the subjects (monetary, time, etc.)?	
E.3.	TIME: The survey should take the subject no more than 30 minutes to complete.
E.4. What are the potential benefits to the subjects?	
E.4.	The subject gets the opportunity to help future research on the fitness industry, women norms, social comparisons, and social networking sites. Furthermore, it could compel them to think about how they spend their time using social media. This may lead to a productive, beneficial self-reflecting moment.
E.5. What compensation or reimbursement, if any, will be offered to subjects (e.g., time, travel, meals, expenses, general incentive to participate, etc.), how will payment be scheduled throughout the study and what is the method of payment (e.g., cash, check, gift certificate, gift item, academic/extra credit, drawing)?	
E.5.	N/A

F. INFORMED CONSENT, ASSENT, and PERMISSIONS
Copies of all informed consent materials must be submitted with this Application. In general, an informed consent procedure that includes all of the elements of informed consent and written documentation is required. The IRB may waive all or portions of these requirements as further explained in the IRB Manual Section XII. Justification for any waiver or alteration of requirements must be provided below.`
F.1. Considering all participant groups, indicate the consent/assent process(es) involved in the research (select all that apply).

F. INFORMED CONSENT, ASSENT, and PERMISSIONS	
☒ In person ☐ Remote (e.g., online, phone, Skype, etc.) ☐ Other:	
F.2. Will the consent process include all of the elements of the informed consent procedure (including all required elements in the informed consent form and the required documentation)? See IRB Manual Section XII.E-F for a description of the informed consent form requirements and Section XII.H for a description of the documentation requirements.	
Yes: ☐ No: ☒	*If No, please explain below the justification to waive or alter the elements of informed consent which must be approved by the IRB (e.g., why oral consent should be approved, etc.).*
Expl. of Waiver or Alteration	I am requesting a waiver of documentation of information consent. As stated in section XII if the IRB manual page 57 for wavier of documentation of informed consent. "the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context". Furthermore, it is made clear in the introduction of the survey that the submission of the survey is the consent process.
F.3. Will the consent and/or assent process be documented by the use of a written consent form that will be signed by the subject or the subject's legally authorized representative? See IRB Manual Section XII for a description of the documentation requirements.	
Yes: ☐ No: ☒	*If No, please explain below the justification to waive or alter the documentation requirements of informed consent which must be approved by the IRB.*
Expl. of Waiver or Alteration	I am requesting a waiver of documentation of information consent. Because all of the respondents will be individuals who are 18 or older. As stated in section XII if the IRB manual page 57 for wavier of documentation of informed consent. "the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context". Furthermore, it is made clear in the introduction of the survey that the submission of the survey is the consent process.
F.4. If the research activities involve only the storage, maintenance, or secondary research use of identifiable private information or identifiable biospecimens (collected for either research studies other than the proposed research or nonresearch purposes), will the broad consent procedure be used? See IRB Manual Section XII.G for a description of the "broad consent" requirements.	
Yes: ☒ No: ☐	*If No, please explain if informed consent will be obtained pursuant to the full informed consent requirements (See IRB Manual Section XII.E-F) or provide the justification to waive or alter the documentation requirements of informed consent which must be approved by the IRB. The "broad consent" requirements may not be altered or omitted.*
Expl. of Waiver or Alteration	N/A

F. INFORMED CONSENT, ASSENT, and PERMISSIONS	
F.5. Will the informed consent procedure include an oral presentation to the subject/legally authorized representative? See IRB Manual Section XII.J for a description of the "oral consent" requirements.	
Yes: ☐ No: ☒	*If Yes, a copy of the short form informed consent document and summary of the oral presentation must be approved by the IRB.*

G. OTHER COMPLIANCE ISSUES
G.1. If this project may be subject to other regulations, such as state or local laws protecting special populations, please identify and explain:
N/A
G.2. If this project involves any of the following activities, requiring consideration by another committee, please check: (*It is the Principal Investigator's responsibility to submit the research project for the approval of the other committee*.) ☐ **Animal Use and Care** ☐ **Radiation Safety** (including the use of x-rays, microwaves, etc.) ☐ **Biological Safety** (including recombinant DNA, biohazards, etc.) ☐ **Chemical Safety** (including hazardous waste materials, chemical carcinogens, flammable materials, lab safety, etc.)

Submission Checklist		
Incl.	**N/A**	**Items**
☒		IRB Research Application, completed and signed by the PI and Faculty Advisor (if applicable)
☒		CITI Completion Report for the Protection of Human Subject Research Training. Training is required of all personnel on the research team involved in data collection/analysis and is valid for 3 years.
☐	☒	Research Investigator Financial Interest Disclosure Statement (regarding Conflicts of Interest)
☐	☒	Recruitment Materials (Emails, letters, scripts, flyers, posters, brochures, etc.)
☒		Informed Consent/Assent Materials
☐	☒	Translator/Transcriber Qualifications
☒		Data Collection Materials (Questionnaires, surveys, data collection forms, focus group/ interview scripts, etc.)
☐	☒	For funded and/or sponsored research: the human subjects portion of the grant proposal.

APPENDIX C: IRB APPROVAL

OFFICE OF RESEARCH AND SPONSORED PROGRAMS | INSTITUTIONAL REVIEW BOARD

TO: Michael Anthony Contreras
Communications
College of the Pacific

FROM: Valerie Andeola, IRB Administrator

DATE: June 22, 2018

RE: IRB Approval Protocol Contreras, #18-159

Your proposal entitled ***"Crossfit, Social Comparison, and Instagram,"*** submitted to the University of the Pacific IRB has been approved. Your project received an Exempt review.

You are authorized to work with ***250 women (18 years of age or older)*** as human subjects, based on your approved protocol. This approval is effective through **June 30, 2019**.

It is your responsibility according to the U.S. Department of Health and Human Services regulations to submit an annual **Active Protocol Status/Continuation Form**. This form is required to request a continuation or when submitting your required closure report. Please be aware that procedural changes or amendments must be submitted to the IRB for review and approval prior to implementing changes. Changes may NOT be made without Pacific IRB approval except to eliminate apparent immediate hazards. Revisions made without prior IRB approval may result in noncompliance of research. To initiate the review process for procedural changes, complete **Protocol Revision Form** and submit to IRB@pacific.edu.