A Mixed-Methods Study: An Examination of the Relationship between Private Social Media Participation and Accountability, Adherence, and Social Connectedness in

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A Mixed-Methods Study: An Examination of the Relationship between Private Social Media Participation and Accountability, Adherence, and Social Connectedness in Weight Loss and Fitness Programs

A Dissertation by

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DEDICATION

I would like to dedicate this study to my beloved five children and children-in-law, Nicolas, Deanna, Nebrisa, Ryan, Nathanael, Natalie, and Nolan, who graciously gave up time with me and cheered me on, even when I grew weary, as well as my three precious granddaughters, Lux Jordana, Layla Jay, and Bellina Angeline, who brighten my days and make being their Gigi both exhilarating and entertaining. And to my beloved mother, Diana, who watches over me and encourages me from above, and my grandmother, Angeline, who always told me to aim for the stars and that the pain of following my dreams would be temporary, but the satisfaction and self-respect from finishing what I started would last a lifetime. I would also like to dedicate this study to my treasured colleague and friend, Dr. Kathleen Bates, who has been the wind at my back and supported me unconditionally since my first day of graduate school in her OLCU600 course. I am truly humbled by your abundance of love and support. Thank you all!
ABSTRACT

A Mixed-Methods Study: An Examination of the Relationship between Private Social Media Participation and Accountability, Adherence, and Social Connectedness in Weight Loss and Fitness Programs

by Diana A. Cabori

Purpose: The purpose of this mixed-methods sequential explanatory study was to examine the influence of private social media usage on accountability, adherence, and social connectedness in weight loss and fitness program participants.

Methodology: This study utilized a mixed-methods sequential explanatory research design comprised of a multi-state quantitative survey of weight loss and fitness participants and subsequent qualitative interviews to elucidate the influence of private social media on weight loss and fitness program participants regarding program accountability and adherence, and social connectedness to others. The population included 3,000 participants of The Camp Transformation Center and 1,000 participants of Warrior Fitness and Wellness Camp.

Findings: The major of findings from this study revealed the frequency of private social media usage significantly correlated with participant accountability, adherence, and connectedness to weight loss and fitness programs, and participant public declaration of weight loss and fitness intentions via mandatory posting on personal Facebook pages significantly increased accountability and adherence to weight loss and fitness programs. Further, participants declared making themselves a priority was integral to program success.
Conclusions: The study established frequent private social media usage led to accountability and social connectedness, which then drove adherence. Resultantly, it is imperative for weight loss and fitness program developers to understand the magnitude of social media usage as an intervention for engaging and supporting participants and to encouraging program adherence via accountability and social connectedness for weight loss and fitness success.

Recommendations: It is recommended this study be replicated using a larger sample size with different social media platforms and different types of weight loss and fitness programs. Additionally, it is recommended to conduct this study by stratifying fewer demographic variables to determine if there is a relationship between the strata and weight loss and fitness program accountability, adherence, and social connectedness. It is further recommended to conduct this study using Nathaniel Branden’s Intelligent Selfishness versus Self-sacrifice as the theoretical framework.
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CHAPTER I: INTRODUCTION

Since the 1980s, weight issues and inactivity in the United States swept across the country and encompassed a breadth of demographic groups such as age, gender, and ethnicity. From 1976 to 1980, 15% of adults aged 20 years and older were considered obese; in 2017, 33% of adults in the U.S. were obese (Centers for Disease Control and Prevention [CDC], 2008). Further, a lack of physical activity was linked to the 10 leading causes of death in America (Rabaeus, Salen, & De Lorgeril, 2013). Recent reports indicated over 60% of adult Americans were overweight or obese (CDC, 2010a). To clarify, the term overweight indicated a Body Mass Index (BMI) of 25 to 29.9 and obese indicated a BMI of 30.0 or more. Although men and women had similar overweight and obesity rates throughout most of the BMI distribution, women tended to be overrepresented in the higher BMI groups (CDC, 2010b).

In the 20th century, there was an earnest focus on nutrition, and by the 21st century, the prevalence of obesity amplified to the point of being declared a global epidemic by the Surgeon General and the CDC (Eknoyan, 2006; Kelly, Yang, Chen, Reynolds, & He, 2008). Accordingly, the number of overweight and obese Americans doubled since 1980, and people at the upper end of the weight distribution curve were heavier than in preceding decades National Center for Health Statistics (NCHS, 2008). Despite the distribution of guidelines for nutrition, fitness, and wellness by the Department of Agriculture and U.S. Health and Human Services, there was inconsistency regarding the most effective approach to promote healthy behaviors (Novak & Brownell, 2012).
Demographic factors such as age, sex, race/ethnicity, and socioeconomic status were associated with overweight and obesity. Overweight prevalence increased with age, cresting at approximately age 50 (Raynor, Polley, Wing, & Jeffery, 2001). The CDC (2010a) reported Black and Hispanic Americans had greater obesity rates than White Americans. Further, low socioeconomic status conducted in a higher BMI (Cubric, 2004). In addition to lifestyle (e.g., diet and exercise), there were physiological and demographic contributors to one’s weight. Physiological factors included genetics, metabolism, hormones, and disease (e.g., type 2 diabetes, high blood pressure, hyperthyroidism). These various physiological and demographic factors likely contributed directly to excess weight or exacerbated the effects of a sedentary lifestyle and increased caloric consumption (Arabia, 2000).

In addition to physiological and demographic factors related to obesity, studies revealed psychological factors also played a role in weight issues. Specifically, identifying the psychological characteristics related to amotivation for engaging in physical exercise was essential to comprehending why obesity and cardiovascular disease was on the rise in the United States (Villareal, Apovian, Kushner, & Klein, 2005). A recent analysis by the CDC (2014) asserted more than 60% of Americans were not regularly active and over 25% of Americans were not active at all. Further, the CDC (2010) stated obesity rose by 1.1% since 2007. Additionally, the World Health Organization (WHO, 2009) reported approximately 400,000 people died in the United States each year due to complications from sedentariness.

Hall et al. (2011) estimated the economic consequences of obesity were over $147 billion in U.S. medical costs and was projected to rise yearly. Further, experts predicted
obesity-associated healthcare issues would soon surpass smoking as the leading cause of preventable death in the United States, with obesity-related healthcare spending on target to exceed $500 billion over the next 20 years (Nichols et al., 2012; Nichols, Ussery-Hall, Griffin-Blake, & Easton, 2012). Although weight issues were often regarded as a matter of calories in and calories out, solutions to this problem were not as simple.

In an age where the fast pace of dual income families became the norm, more families consumed fatty foods and excess calories from fast food. These types of foods were deficient in nutrients yet regarded as a convenient and inexpensive solution by numerous Americans (Novak & Brownwell, 2012; Schlosser, 2012; Taylor & Villas-Boas, 2016). The problem for individuals trying to lose weight appeared to lie in substantive and sustainable behavioral changes necessary to engender lasting weight loss (Hu et al., 2016; Office of the Surgeon General, 2012; Ogden, Carroll, McDowell, & Flegal, 2007).

As shown in Figure 1, nearly 36% of adults in the U.S. were obese and it was projected 50% of adults in the U.S. would be obese by the year 2030 (Fryar, Carroll, & Ogden, 2012). The CDC (2017) similarly reported 36.5% of Americans were obese, and NCHS (2008) stated education levels among men of all ethnicities played no significant role in weight, yet women of all ethnicities with college degrees had fewer incidents of overweight and obesity. The CDC (2017) and Laverie (1998) also asserted one’s environment influenced physical activity and motivation to lose weight.
Figure 1. Results and trends from the 2009-2010 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights from 1960 to 2010 for adults in U.S. aged 20-74.

Two theories supporting the CDC’s assertions were Ecological System Theory (EST) and Motivation Theory. EST was first established in 1979 by renowned psychologist Urie Bronfenbrenner, who developed the social ecological model to explain how environmental systems shaped human development (Onwuegbuzie, Collins, & Frels, 2013; Solmon, 2015). The Social Ecological Model portended positive human development is dependent upon regular interaction with people, objects, and symbols in one’s environment. The absence of these environmental interactions impacted one’s emotional health and motivation to be physically active (Deci & Ryan, 1985, 2000; Neal & Christens, 2014; Onwuegbuzie et al., 2013).

Focusing on environment and motivation was integral to grasping how behavioral psychology shaped weight issues (Zagzebski, 2004). Motivation theory stemmed from the works of many theorists and most notably Kurt Lewin’s cognitive approach to
motivation, which centered on specific behaviors and anticipated results for weight loss (Liem, Walker, & McInerney, 2011). Accordingly, motivation theory directly related to self-determination theory (SDT) and its descendant, social connectedness.

Although it was difficult to pinpoint why many Americans were unsuccessful at weight loss, a national discussion must commence. This would encompass the compromises Americans were willing to make for health, and support research centered on the possible sources of the problem, reasons for setbacks, and tactics currently utilized by healthy nations (Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016; Leatherman, 2004). Despite an abundance of weight loss programs, according to Consumer Affairs (2017), only a few programs were at the forefront due to a track record of success, which included physical activity and private social media support.

For example, Weight Watchers has a history of helping people lose weight since its inception in the early 1960s (Kapner, 2015). The founder, Jean Nidetch, felt her weight gain (largely attributed to chocolate cookies) was likely not a problem she alone shared. As a result, she set about gathering friends in her small Queens, New York apartment once a week to discuss weight loss challenges. She provided a safe haven for sharing one’s struggles and a collaborative climate for confabulating best practices for weight loss. Soon, Nidetch was renting large halls to accommodate the sizeable number of attendees, and shortly thereafter, Weight Watchers was launched (Weight Watchers, 2017).

Today, Weight Watchers has over a million members worldwide and abides by its original philosophy wherein dieting was only one aspect of long-term weight management. Further, a healthy body resulted from a healthy lifestyle, which embodied
one’s mental, emotional, and physical health. Weight Watchers also provided “information, knowledge, tools, and motivation to help you make the decisions that are right for you about nutrition and exercise” and “guiding you to make positive behavioral changes in your life” (Weight Watchers International [WWI], 2016).

Another notable weight loss program was The Camp Transformation Center (TCTC, 2017a). Dr. Bakhtiar co-founded TCTC, a program concentrated on weight loss and fitness in a group setting. Similar to Weight Watchers, a private social media component helps members adhere to the program. Further, TCTC (2017b) leveraged social connectedness to provide a safe forum for members to voice struggles and triumphs that might otherwise be construed as profoundly personal or narcissistic in public Facebook posts.

Exploring social factors related to health warranted further discussion to delineate healthy weight behaviors (Goode et al., 2016). Social connectedness is one such factor as it explicated how basic psychological needs must be satisfied before humans can connect with others (Deci & Ryan, 1985, 2000, 2002; Lewis, 2016). Connectedness referred to an innate need to belong to a group and connect with others (Ryan & Deci, 2000). Further, connectedness embraced the need to be cared for and loved (Baumeister & Leary, 1995). Correspondingly, the need for social contact was evolutionary and integral to human survival (Xiuping & Meng, 2014).

Modern humans may no longer rely on social support to secure provisions and shelter; however, research suggested solitude and relationship troubles were negatively associated with poor mental and physical health (Godfrey, 2005). Moreover, social support was critical for one’s physical and emotional well-being (Vella, Kamarck, Flory,
Researchers proposed social support equipped people with psychosocial resources and helped them cope with dissuasive stimuli, such as stress and pain (Brown, Sheffield, Leary, & Robinson, 2003; Vella et al., 2012).

Additional studies indicated social support was beneficial when it was nonevaluative (i.e., non-judgmental) and nondirective (i.e., providing facilitation without explicit instruction regarding how one should cope; Cundiff, Kamarck, & Manuck, 2016; Harber, Schneider, Everard, & Fisher, 2005). Given research was limited to using reminders of social support, such as photographs or mental simulations to modify various perceptions (Masters, Stillman, & Spielmans 2007; Schnall, 2003), this research examined whether social support via private social media participation influenced behavior, such as resisting unhealthy food choices, establishing realistic goals, and provoking adherence to group weight loss and fitness programs.

**Background**

The history of obesity and physical inactivity in the U.S., the history of weight loss and fitness programs, post-diet weight gain, social determinants of health, and social media platforms informed the framework for this study. The framework also included the historical context of social psychology theories, including social ecological theory, motivation theory, and self-determination theory to examine if a relationship exists between participation in private social media and accountability and adherence to prescribed group weight loss and fitness programs. “Psychological theories propose that changing health behaviors involves a motivational stage, in which goals turn into intentions to act, and a volitional stage, in which intentions turn into plans that are carried out” (Benyamini et al., 2013, p. 119). A relational study of these factors could explain
the potential for positive impact on group weight loss and fitness programs from utilization of private social media platforms as a means of facilitating social connectedness and increasing program accountability and adherence (Hwang, Etchegaray, Sciamanna, Bernstam, & Thomas, 2014).

Thus far, the success rate in treating obesity remained disconcertingly low as doing so required altering deeply rooted patterns associated with the environment, food, eating habits, lack of physical activity, and “social fabric” (Callahan, 2013, p. 34). Social networks showed promise for recruiting friends and family members to lose and maintain weight together to buoy the structural and functional support of participants, which in turn, was led to better weight loss outcomes; however, the role of social support in weight loss and management is still not fully understood (Karfopoulou, Anastasiou, Avgeraki, Kosmidis, & Yannakoula, 2016). Offering support and a sense of belonging to group weight loss and fitness participants may also engender a desire to adopt healthy habits stemming from positive, weight-related behaviors (Grieve, Indian, Witteveen, Tolan, & Marrington, 2013; Struble, 2011). Figure 2 depicts the relationship between the dependent variables of accountability, adherence, and social connectedness in a weight loss and fitness program to the components of the framework for this study.
Figure 2. Study framework indicating relationship to weight loss and fitness factors.

History of Obesity in the United States

Obesity was known to be grievous for centuries. Although obesity emerged marginally in America in 1850 (Segrave, 2008), it was not until 30 years ago the federal government actively focused on obesity as a national health threat (Callahan, 2013; Radford, Jones, & Winterstein, 2015). Thus far, the success rate in treating obesity remained low, and exploring alternative weight loss and physical activity interventions was considered important because they help prevent some of most difficult health problems the U.S. is currently facing. “Unlike infectious diseases and plagues…[obesity] is not caused by deadly viruses or bacteria,” which are responsive to vaccines for prevention (Callahan, 2013, p. 34). In fact, it was deemed easier to treat medical conditions caused by obesity such as type 2 diabetes, heart disease, and kidney failure, than to treat obesity (Callahan, 2013; Seidell & Halberstadt, 2016).
Baby Boomers and Gen Xers were the first in the country’s history predicted to
die at a younger age than their parents (Olshansky, 2015; Olshansky et al., 2005). Since
the 1970s, the pervasiveness of obesity in the United States tripled among children and
doubled among adults (Flegal, Carroll, Ogden, & Curtin, 2010). Further, obesity in the
U.S. from 2013-2014 was 35.0% among men and 40.4% among women (Flegal et al.,
2016). Cloake (2012) maintained Americans spent more than $40 billion per year trying
to lose weight and 66% of dieters set New Year’s resolutions and failed.
Correspondingly, the National Institute of Health Statistics declared two-thirds of
American adults were overweight or obese (Rauscher, 2017).

Obesity is considered a public health crisis of epidemic proportions by means of
its provocation of high blood pressure, high cholesterol, type 2 diabetes and its
complications, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep
apnea, and respiratory problems, as well as endometrial, breast, prostate, and colon
Additionally, high-fat foods taste good, are budget-friendly, and are readily available and
widely advertised. Moreover, portion sizes increased and Americans ate out more
regularly (Nielsen, Siega-Riz, & Popkin, 2002; Slivka, 2001). This endemic increase is
attributable to environmental changes and behaviors in predisposed people. Sedentary
lifestyles commencing as early as age two are associated with an increase in media
influences such as television, computers, handheld devices, and video games (Alameda,
2009; Swick, 2006).
Physical Inactivity

According to the U.S. Department of Health and Human Services (USDHHS) (2010), participating in regular physical activity decreases the risk of cardiovascular disease, a variety of cancers, and type 2 diabetes, yet Americans across the life span do not engage in recommended amounts of moderate-to-vigorous physical activity (MVPA). Physical inactivity surpassed obesity-related deaths and accounts for 5.3 million deaths annually in America. Increasing activity by 25% would prevent 1 to 3 million deaths each year, and life expectancy would increase by 0.68 years (Solmon, 2015).

Ecological Systems Theory

Ecological system theory (EST) was developed in 1979 by prominent psychologist Urie Bronfenbrenner to divulge how environmental systems shape human development (Onwuegbuzie et al., 2013). Specifically, Bronfenbrenner divided a person’s environment into a model of five socially organized systems: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The absence of such interactions affected one’s desire to be physically active as well as one’s emotional health (Deci & Ryan, 1985, 2000; Neal & Christens, 2014).

Motivation Theory

Motivation theory was rooted in the contributions of Freud, Adler, and Maslow; however, Kurt Lewin’s cognitive approach to motivation solidified how certain behaviors foretell results (Liem et al., 2011). Studying motivation became pivotal to understanding behavioral psychology as salient to behaviors associated with weight loss and fitness (Zagzebski, 2004). Psychosocial and motivational support, combined with coping strategies, were associated with motivating behavior change and necessary during
setbacks to weight loss and fitness routines (Stubbs & Lavin, 2013). Moreover, motivation theory served as an umbrella for self-determination theory and its descendant, social connectedness.

Social Support

An unresolved dissonance was associated with defining social support (Verheijden, Bakx, van Weel, Koelen, & van Stavaren, 2005); however, in the broadest sense and for this research, social support was defined as positivity stemming from the conscious or subconscious feeling of being supported by others within one’s network (Deci & Ryan, 2002; Verheijden et al., 2005). Per the research, an individual support network may include one’s spouse, family, friends, or colleagues. The literature spanning nearly two decades further suggested social support in terms of weight loss interventions was significantly more successful when weight loss participants united with support partners as opposed to trying to lose weight on one’s own (Svetkey et al., 2011).

Social Connectedness

Thomson (2016) suggested, “All behaviours need two things to be installed; a strong emotion, and an experience” (para. 12). Lack of social contact had twice the impact on early death as obesity, and isolation disrupted sleep, elevated blood pressure, increased cortisol levels, affected immune systems, and declined overall well-being (Cutler, 2015). People die from traditional health issues, but lack of social connectedness had a profound influence on health (Proceedings from the National Academy of Sciences, 2013). Robust “social support networks have been shown to be effective in buffering the effects of stress and depressive symptoms” (Branscum, Chen, & Xiaogian, 2014, p. 14), which linked to obesity (Aneshensel, 2015; Aneshensel & Stone, 1982; Berkman, 2001).
In contrast, social connectedness positively related to weight loss among social media participants and the number of friends a participant had in an online weight loss community may portend the participant’s commitment and subsequent success in a program (Ma, Chen, & Xiao, 2010).

**Weight Loss and Fitness**

To achieve a healthy body weight, the right nutritional and physical elements must be in place (Thomson, 2016). Thomson (2016) asserted:

For our ancestors the need to lose weight was not an issue; for them the main challenge was getting more fats, carbs and even sugar into their diet.

The first person known to have gone on a ‘diet’ was the person with the most plentiful supply of food in the land - our first King, William 1st, who we know as William the Conqueror. History records him as being a very fat man indeed; no doubt by today’s standards he would be classified as morbidly obese. He was so big that by the end of his reign he was too big to get on a horse, which was a huge problem as it was not only the key mode of transport, but also considered very regal. (para. 1)

The literature linked a lack of physical activity and poor diet to weight and disease. According to the Office of the Surgeon General (2012), 60% of adults were overweight, out of shape, and did not exercise enough to maintain basic health. On June 20, 2002, President George W. Bush signed an executive order to promote personal fitness among the public. The president was concerned with the number of Americans suffering from insufficient physical activity and poor dietary habits, and the failure of
current practices to motivate the public to improve (Lauderdale, Yli-Piipari, Irwin, Layne, 2015).

Experts identified a clear need to delineate mechanisms capable of quickly implementing cost-effective, evidence-based weight loss programs. Research showed exercise alone was not as effective as a program with a healthy diet regimen. A variety of weight loss and fitness programs exist, ranging from disease-specific to loop models; however, research showed the more user-friendly and flexible the program, the more likely participants would partake (Marrero et al., 2016; Palmer, 2014).

**History of Weight Loss Programs**

Fad diets came and went, but the concept of dieting existed for centuries. In 1820, Lord Byron propagated the vinegar and water diet, which consisted of drinking water mixed with apple cider vinegar. This diet is still popular today as it is believed the nutrients, organic acids, and enzymes in unfiltered apple cider vinegar increases the body’s metabolic rate and serves as an appetite suppressant (Rotchford, 2016).

In 1925, the Lucky Strike cigarette company launched the *Reach for a Lucky Instead of a Sweet* campaign, taking advantage of nicotine’s appetite-suppression benefits (Johnson, Eaton, Pederson, & Lowry, 2009; Klesges, Murray, & Brown, 1998). In the 1930s, the grapefruit diet was popular and quickly coined the Hollywood diet; the plan required dieters to consume grapefruit with every meal. The 1950s brought the cabbage soup diet and claimed participants could lose 10-15 pounds in one week just by eating a diet of cabbage soup each day (Rotchford, 2016).

In the mid-1950s, opera singer Maria Callas declared she lost 65 pounds by ingesting a tapeworm in the form of a pill (Rotchford, 2016). This dangerous diet was
known as the tapeworm diet and the idea was one’s calories would be split between the
tapeworm and the host to reduce caloric intake. The difficulty with tapeworms was they
did not stay in the stomach and traveled through the bloodstream to the brain, which
posed deadly consequences. Tapeworms also depleted nutrient intake in addition to
reducing calories. Moreover, a tapeworm could be felt in the digestive tract and was
unpleasant to pass through the rectum (Rotchford, 2016).

A variety of foods and food supplements were also introduced as diet plans. In
1975, Dr. Sanford Siegal invented the cookie diet. The cookies were comprised of a
blend of amino acids and protein designed to control hunger. Dr. Siegal’s cookies as well
as many knockoff brands are still popular today (Haas, 2009). Slim Fast shakes hit the
market in 1977 and soon dieters were drinking a shake for breakfast and lunch, followed
by a sensible dinner. Dr. Herman Tarnower was a cardiologist who published The
Complete Scarsdale Medical Diet, which called for high-protein, low carbohydrates,
along with fruits and vegetables. The restrictive nature of the diet affected sustainability
and was largely remembered as a fad diet (Scarsdale, 2016).

Drug supplements also played a role in diet plans but came with consequences. In
1979, the diet drug Dexatrim became available and contained phenylpropanolamine
(PPA), which was linked to stroke (Rotchford, 2016). Resultantly, Dexatrim changed the
formula in 2000 and continues to be popular with dieters today. Ayds chewable appetite
suppressants were made popular in the 1980s but were taken off the market due to the
AIDS crisis and the unfortunate homophonic name association (Rotchford, 2016). In
addition, all diet drugs containing Ephedra were banned in 2004 by the FDA after it was
linked to heart attacks (Rotchford, 2016).
The 1980s introduced a multitude of fitness programs in addition to new fad diets (Rotchford, 2016). In 1982, Jane Fonda professed “No pain, no gain” in her exercise video, *Workout: Starring Jane Fonda*, as the aerobics trend proliferated the fitness scene. Dancer Judi Sheppard Missett founded Jazzercise in 1983, and it was an instant hit in the United States. Harvey and Marilyn Diamond published *Fit for Life* in 1985, which excluded complex carbs and protein from being consumed during the same meal. Oprah Winfrey praised a liquid diet called Optifast for her 67-pound weight loss in just four months. Unfortunately, Oprah regained all 67 pounds, plus an additional 23 pounds, shortly thereafter (Rotchford, 2016).

Low-card diets also re-emerged in the late 1980s and continued into the 2000s. Dr. Robert Atkins proclaimed in 1988 the only way to lose weight and keep it off was to eat a high-protein, low-carb diet, and published *Dr. Atkins’ New Diet Revolution*. The Atkins diet is still used today and a favorite among celebrities (Atkins, 2016). In 1994, The Guide to Nutrition Labeling and Education Act required food labeling on most product packaging (Rotchford, 2016). The Zone diet called for a ratio of specific carbs, fat, and protein at each meal and was wildly embraced by celebrities. Miami’s Dr. Arthur Agatston joined the low-carb craze by publishing *The South Beach Diet*, viewed as a more sensible version of the Atkins diet (South Beach, 2016).

In 2004, weight loss became entertainment when *The Biggest Loser* made its TV debut, turning weight loss into a reality show (Houston, 2016). Beyoncé drew attention when she lost 20 pounds using the Master Cleanse, a mixture of hot water, lemon juice, maple syrup, and cayenne pepper, to speed up the metabolism. In 2011, the HCG Diet emerged and combined a fertility drug with a strict 500- to 800-calorie-a-day regimen.
Boot camps became popular in 2007 and ranged from outdoor programs with classes twice a day, to indoor gyms with classes throughout the day (Rotchford, 2016). Over the past few decades, diet programs were introduced, faded away, and were reconceptualized in other new configurations.

**Social Media**

Social media usage was integral to the link between weight loss behaviors through self-evaluation and positive social media messaging (Knobloch-Westerwick, 2015). Social media was a nascent sensation that swiftly shifted from a communication tool among the Millennial generation to a widely utilized communication tool across generations. Over 50% of the world’s population was under the age of 30 in 2017, and social media was the foremost activity on the web. As such, social media became central to standard marketing campaigns. Although many weight loss programs began to incorporate social media across a breadth of platforms such as Facebook, Instagram, and Twitter, currently, best practices were not yet established (Qualman, 2012).

**Statement of the Research Problem**

The WHO regarded obesity as the most serious health crisis in the developed and developing world, and it transcends gender, race, and socioeconomic status (Morris, Beilharz, Maniam, Reichelt, & Westbrook, 2015). Today, heart disease, high blood pressure, and type 2 diabetes remain on the rise in the United States (O’Neil & O’Driscoll, 2015). Further, two-thirds of Americans are obese compared with 50% in 1970, and childhood obesity tripled in the past 30 years. Similarly, Americans consume 25% more calories than they did in 1970 (USDHHS, 2010). Specifically, an abundance of fats and grains comprise the sources of increasing caloric intake. These two food
groups include oils and fats in processed foods, and flour in cereals and breads, which accounted for approximately 37% of diets in 1970. Currently, they account for approximately 46% of the American diet (U.S. Department of Agriculture, 2016). Many overweight and obese Americans futilely relied on diets and exercise to lose weight, and there continued to be no lack of diet and exercise programs. Often, Americans turned to fad diets in hopes of quick weight loss (NCHS, 2008).

Fad diets were not the best way to lose weight and keep it off. In fact, fad diets led to weight gain and significant health problems. According to NCHS (2008), fad diets lacked sufficient nutrients. Also, losing more than three pounds a week after the first few weeks could increase the development of gallstones. Moreover, consuming fewer than 800 calories a day long-term may cause serious heart problems (DeAngelo, Kalumuck, & Adlin, 2017).

Diets were not the only contributors to the obesity problem in America. Behavior and bad habits were also associated with weight gain and poor weight management. According to the USDHHS (2010), Americans did not set realistic weight loss goals and often did not recognize the need for a strong support system in their weight loss plans. Additionally, Americans led fast-paced lives and frequently ate on the go, which affected satiation. It takes the brain a minimum of 15 minutes to feel full. The USDHHS (2010) suggested eating slowly and avoiding eating in cars or cubicles at work. Likewise, studies showed eating alone caused people to overeat (Frank, 2014).

Obesity was also associated with a lack of physical activity and sedentary lifestyles (Ekelund et al., 2016). It was estimated “Americans spend 70% or more of their waking hours sitting” (Owen, Sparling, Healy, Dunstan, & Matthews, 2010, p.
Regardless of the “well-established physical and emotional benefits connected with regular participation in moderate physical activity, most Americans are not getting enough of this important and life sustaining behavior” (Owens et al., 2010, p. 1141).

“While controversies exist about type, intensity, frequency, and duration of physical activity, there is no dispute about the health value of an optimal physical activity requirement for humans” (Garry & John, 2014, para. 17). Diet, exercise, and behavioral changes are all salient aspects of weight loss, and an abundance of information is available regarding the prevalence of obesity in America. Nonetheless, there remained a dearth of information and scholarly research concerning the role of social connectedness in weight loss, especially regarding the integration of social connectedness through social media as a weight loss and fitness intervention (Spain, 2015).

The swift spread of web-based social media influenced how users impart health-related information; however, a lack of information exists pertaining to demographics of such users (Sadah, Shahbazi, Wiley, & Hristidis, 2015). A Northwestern Medicine study showed online dieters with high social support – those who logged in regularly, recorded their weigh-ins and friended other members – lost more than 8% of their body weight in six months (Spain, 2015). Further, incorporating private social media platforms into weight loss and fitness programs was an emerging segment of behavioral research and merited further study given the potential benefits to participants in terms of easy access to social support, peer and trainer motivation, and health information (Chang, Chopra, Zhang, & Woolford, 2013; Dahl et al., 2016).

A review of studies in Brain and Cognition unearthed regular exposure to virtual food or “food porn” intensified physical hunger and it was suggested to unfollow such
virtual sites (Investor’s Business Daily, 2015; Spence, Okajima, Cheok, Petit, & Michel, 2016). Kloss (2016) asserted social media habits that exhibited positive results associated with weight loss included building support systems, helping others who struggled, posting progress to inspire others, and blogging to determine eating triggers. Conversely, Shensa, Sidani, Lin, Bowman, and Primack (2016) studied 1,785 young adults (aged 19-32) in the U.S. and determined participants who spent the most time per day on social media reported the lowest levels of perceived emotional support. The researchers noted the results may be attributed to the socially accepted frequency with which young adults checked their social media as well as the exclusion of asking how and when participants used social media (Shensa et al., 2016). This study also did not examine private social media use among likeminded participants and perceived emotional support among young adults in the U.S. Consequently, it was essential to examine social connectedness to determine if social support via private social media such as Facebook influenced accountability and adherence in participants of weight loss and fitness programs.

**Purpose Statement**

The purpose of this mixed-methods sequential explanatory study was to examine the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability, adherence, and social connectedness. The study also sought to examine the relationship between demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ frequency of use of private social media and their level of accountability, adherence, and social connectedness. Lastly, the study sought to
explore weight loss and fitness program participants’ perceptions of the impact of frequency of use of private social media on their level of accountability, adherence, and social connectedness.

**Research Questions**

The research questions guiding this study were:

1. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?

2. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?

3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?

4. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and frequency of use of private social media?

5. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of accountability?

6. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of adherence?
7. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of social connectedness?

8. How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?

9. How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?

**Significance of the Problem**

The significance of this study centered on private social media usage as an intervention in weight loss and fitness programs to increase accountability, adherence, and social connectedness. Harmon (2016), Barnes (2007), and Eknoyan (2006) found a significant decrease in physical activity among Americans since 2000, and in 2015 a study in the *Annals of Medicine* linked a sedentary lifestyle to an increased risk of illness, disease, and even early death (Chen, Apostolakis, & Lip 2014). WHO (2009) reported approximately 400,000 people died in the United States each year due to complications from inactive and unhealthy lifestyles.

Additionally, deprivation of social contact contributed twice as much as obesity to early deaths in America (Cutler, 2015). Further, a study by Fleuriet, Cole, and Guerrero (2014) denoted Facebook users who post weight loss and workout routines were deemed annoying narcissists with low self-esteem. This was disturbing to learn as weight loss
and fitness program participants yearned for safe havens within social media platforms to share successes and struggles (Jane, Foster, Hagger, & Pal, 2015; Roots, 2016; Sanford, 2010). A more recent study found “few studies have examined the value of using a social media platform like Facebook for weight management, and no studies have been undertaken to date that promote dietary and physical activity” (Jane et al., 2017, p. 3).

Definitions

The researcher defined the following terms to bring clarity and cohesion to the research topic.

Accountability. The ability to take responsibility for one’s actions/decisions and honor commitments to one’s self, family, program, trainer, fellow gym members, and the like (Leggatt-Cook & Chamberlain, 2012).

Adherence. The ability to stick with one’s weight loss and fitness program (Jacobs, Radnitz, & Hildebrandt, 2016).

Body mass index (BMI). According to the CDC (2014), a person’s BMI is one’s weight in kilograms divided by the square of one’s height in meters. Further, BMI is an unsophisticated yet swift method of screening for underweight, normal, or healthy weight, overweight, and obesity. A BMI under 25 indicated a healthy weight, followed by a BMI of 25 to 29.9, which indicated overweight, and a BMI over 30.0 indicated obesity.

Ecological system theory. The social ecological model was developed in 1979 by prominent psychologist Urie Bronfenbrenner to divulge how environmental systems shaped human development (Onwuegbuzie et al., 2013).
Mixed-methods sequential explanatory research design. The collection and analysis of quantitative data, followed by the collection and analysis of qualitative data in two consecutive phases within one study (Ivankova, Creswell, & Stick, 2006).

Motivation theory. Motivation theory is an umbrella theory encompassing self-determination theory. In White’s (as cited by Cofer & Appley, 1967) effectance motivation theory, White delineated how human organisms found inherent satisfaction by expanding their own capabilities, which increased competence.

Physical activity. USDHHS (2010) defined physical activity as 150 minutes per week of moderate activity, which along with two days of strength training was sufficient to maintain good health.

Private social media groups. Closed social media groups were also called private social media groups. These private social media groups were not forward-facing or public platforms for purposes of sharing and viewing sensitive information by like-minded individuals (Fleuriet et al., 2014).

Self-determination theory (SDT). This theory was derived from motivation theory. The essence of SDT posited humans had a natural desire to develop and elevate a sense of self (Deci & Ryan, 2002; Vallerand, 2000).

Social connectedness. Humans have an innate need for belonging and connecting to other humans in social settings (Deci & Ryan, 2000).

Social media platforms. Kaplan and Haenlein (2010) defined social media platforms as “collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds” (p. 59). Some examples of social media platforms include Facebook, Google+, Instagram, LinkedIn, and Twitter.
Web 2.0. Since the 1990s, the world wide web underwent transformative changes that led to the term Web 2.0, which was “characterized by interactive applications that allow users to participate in contributing, organizing, and creating their content” (Shelly & Frydenberg, 2011, p. 1).

Weight loss and fitness programs. Weight loss programs focused on regimented diet and exercise to mitigate physical and motivational challenges of participants by incorporating incentives (Errickson, 2016).

Delimitations

This study was delimited to participants at TCTC and the Warrior Fitness and Wellness Camp (WFWC). The qualitative portion was further delimited to 15 participants who, based on their survey results, reached a BMI of 25 to be a normal and healthy weight.

Organization of the Study

The purpose of this mixed-methods sequential explanatory study was to examine the influence of private social media participation on accountability, adherence, and social connectedness in participants of weight loss and fitness programs. This study intended to assist the weight loss and fitness industry to delineate effective, non-surgical interventions during a time of unparalleled obesity and weight-related mortality rates in the U.S. The landscape of obesity intensely changed in the past decade due to poor eating habits, physical inactivity, and social isolation (Cutler, 2015; Taylor & Villas-Boas, 2016). These changes made this research important to future weight loss and fitness interventions.
The study consists of five chapters, a bibliography, and appendices. Chapter II presents a review of the literature pertaining to the weight loss and fitness industry and the exploration of the role of social media support to group weight loss and fitness program adherence, utilizing social ecological theory and social connectedness as theoretical frameworks. Chapter III explains the research design and methodology of the study. It includes the population, sample, and data-gathering process. Chapter IV presents and analyzes the findings of the quantitative and qualitative data collected. Lastly, Chapter V contains a summary, findings, conclusions, and recommendations for action and future research.
CHAPTER II: REVIEW OF THE LITERATURE

The economy shifted from an industrial model to a technological model. Resultantly, Americans became more sedentary, which begat a host of health issues (Komlos, Breitfelder, & Sunder, 2009). “Excess intake (also a form of malnutrition) contributed to cardiovascular diseases, diabetes, cancer, degenerative eye diseases, obesity, and dental caries” (WHO, 2003, p. 26). The literature review examined the history of obesity in the U.S. and social determinants of health. It also examined medical weight loss interventions and diets, group weight loss and fitness programs, participation rates for group weight loss and fitness programs, social media platforms, and the theoretical frameworks influencing the study.

History of Obesity

Over the years, a metamorphosis occurred regarding the outlook of obesity. After centuries of struggling to “overcome food scarcity, disease, and a hostile environment” (Caballero, 2007, p. 1), the average body size of the population increased during the industrial revolution for military and economic powers. Accordingly, there was a proliferation of economic development via survival and productivity as the population moved from being underweight to normal, and thus the body mass index (BMI) grew (Caballero, 2007).

The Surgeon General (2010) noted over the past two decades an epidemic increase in obesity in the United States. Specifically, obesity tripled among children and doubled among adults (An, 2014; Flegal et al., 2010). The increase resulted from environmental and behavioral changes in predisposed people. Consequently, heavily advertised, inexpensive, super-sized, and calorie-laden food that tasted good saturated the
American diet (Flegal, Carroll, Ogden, & Johnson, 2002). Further, families ate out more often and children opted for sugary beverages rather than low-fat or non-fat milk and water. Poor diets were not solely to blame for the increase in obesity in the U.S. (Jolliffe, 2004). The prevalence of technology contributed considerably to physical inactivity, as did car-dependent community designs that inhibited walking and biking, and a reduction in school recess (Holmes, 2012).

**Obesity Prior to the Nineteenth Century**

“Chronic food shortage and malnutrition have been the scourge of humankind from the dawn of history” (Eknoyan, 2006, p. 421). During the 12th and 15th centuries, food was scarce, people were hungry, and fat symbolized wealth and power. Accordingly, “corpulence and increased flesh” during the Renaissance period were deemed desirable as represented in “the arts, literature, and medical opinion of the times” (Eknoyan, 2006, p. 421). In ancient Roman cities and throughout London and Paris, urban dwellers living in large apartment buildings often lacked kitchen facilities and consequently could not prepare meals. As a result, the urban population and travelers on religious pilgrimages relied on street food vendors, which equated to the original form of fast food (Eknoyan, 2006).

**Obesity in the Nineteenth Century**

At the outset, longevity and body size benefited from advances in technology, which enhanced public health and the quantity, quality, and variety of foods (An, 2014). Technological advances of the 18th century produced a steady increase in food supply and accessibility. From 1801 to 1900, obesity progressively permeated the American lifestyle as people also became more sedentary (Zimdars, 2015).
Obesity in the Twentieth Century

According to the National Institutes of Health (NIH), fast foods were quick options to homebased meals (Ahmed, 2009). They were also replete in saturated fat, sugar, salt, and calories. After World War I, automobiles became more affordable and drive-in restaurants were launched (Sheridan, 2004). Walter Anderson introduced White Castle, the first fast food restaurant in 1916 (Jakle & Sculle, 1999). Interestingly, Merriam–Webster Dictionary first recognized the term fast food in 1951. In 1953, C. A. Swanson and Sons introduced the first TV dinner and forever shifted Americans’ food intake from homebased meal preparation to frozen dinners and fast food restaurants (Männikkö, 2016).

Since 1960, obesity rates climbed 262% among adults over the age of 20 (CDC, 2010; Mokdad et al., 1999), and by the 1980s, U.S. overweight and obesity rates reached epidemic proportions (Mitchell, Catenacci, Wyatt, & Hill, 2011; Zimdars, 2015). From 1901 to 2000, economic progress and improvements in housing and sanitation accompanied an epidemiological shift from infectious diseases of the 19th century to chronic diseases of the 20th century, such as heart disease, stroke, and cancer. With it came a nutritional transition when diets, particularly in Western Europe, changed to overconsumption of energy-dense fats and sugars, producing an exponential increase in obesity. Concurrently, obesity became more common among the poor versus the rich (An, 2014; Caballero, 2007).

Obesity in the Twenty-First Century

“There is little to suggest obesity was common in society until the last 50 years” (Sabin, Kao, Juonala, Baur, & Wake, 2015, p. 83). Obesity in the 21st century continued
to be an epidemic and included chronic diseases from modern lifestyles (Allison, Fontaine, Manson, Stevens, & VanItallie, 1999; Stein & Colditz, 2004). “The term ‘lifestyle’ however, ignores broader social, economic, and environmental determinants while inadvertently ‘blaming the victim.’ Seen more eclectically, lifestyle encompasses distal, medial, and proximal determinants” (Garry & John, 2014, p. 1). Obesity was hailed as a major public health threat (Cooper & Gilman, 2011; Surgeon General, 2001). Rössner (2002) exclaimed at the onset of the 21st century, “more people will die from complications of over nutrition than of starvation” (p. 2). Moreover, childhood obesity in the 21st century was called the new morbidity (Sabin, Kao, Juonala, Baur, & Wake, 2015).

**History of Weight Loss and Fitness Programs**

Throughout history, a plethora of commercial diet and exercise programs existed and varied in length, intensity, and structure. The market was saturated with everything from rapid weight loss and gimmicky diets and supplements, to long-term weight loss, and weight management (Marrero et al., 2016). This section of the literature review includes medical weight loss programs, surgical weight loss programs, commercial diet plans, online diets, and boot camp weight loss and fitness programs.

**Medical Weight Loss Programs**

Medical weight loss programs utilized evidence-based treatments closely supervised by medical staff (Altieri et al., 2015). Medical weight loss further consisted of preoperative weight loss for those preparing for bariatric surgery, or for those who wished to lose weight without surgery (Marrero et al., 2016). The following is an

**Johns Hopkins Weight Management Center.** Johns Hopkins Weight Management Center offers two programs. The first program is the Light Living Plan for patients with a BMI of 30 or more who require medical monitoring. The Light Living Plan follows a strict diet of five meal replacements and one food-based diet each day. This program lasted 12-18 months. The second plan was for patients with a BMI of 25 to 30 called the Essentials Plan, which consisted of flexible meal planning and was not medically supervised (Campbell, 2013).

**UCLA Risk Factor Obesity (RFO) program.** The UCLA (n.d.) RFO program originated in the mid-1970s by Dr. Morton Maxwell. It is a medically supervised program comprised of three low-calorie dietary regimens ranging from 400 to 1,500 calories per day. In addition to following meal plans, patients met weekly with medical staff who monitored progress, provided counseling, and helped with medication adjustments (Campbell, 2013). Additionally, RFO was one of the first medical weight loss programs to incorporate appetite suppressant medications to control obesity (UCLA, n.d.). After completing the RFO program, patients were encouraged to enroll in UCLA’s six-month maintenance program (Campbell, 2013).

**The Medical Weight Control Center (WCC).** The Medical Weight Control Center (WCC) in the Division of Endocrinology at Columbia University Medical Center is “one of the most highly regarded non-surgical weight management programs in the region” (Columbia University, 2017, para. 1). WCC assists patients by means of a physician-supervised program for weight loss and weight management. The program
includes “biochemical analysis, medication management (if applicable), dietary recommendations, education, and lifestyle changes” (Columbia University, 2017). Further, participants consumed Optifast under physician supervision as a liquid meal replacement diet (Campbell, 2013). Moreover, some patients were referred to Columbia’s Center for Metabolic and Weight Loss Surgery to be evaluated for weight loss surgery if they did not lose a significant amount of weight through non-surgical methods (Columbia University, 2017).

**Surgical Weight Loss Programs**

Weight loss surgery was referred to as bariatric surgery and was designed to help morbidly obese patients with a BMI of 40 or more lose weight and help mitigate medical problems related to obesity. Accordingly, bariatric surgery promoted weight loss by restricting the amount of food the stomach could accommodate, which in turn limited caloric intake. Most bariatric surgical procedures utilized malabsorption as the small intestine was shortened or bypassed to reduce the number of calories and nutrients absorbed (Devlin et al., 2016; Tarjan, 2016). The four most common types of weight loss surgeries are Roux-en-Y gastric bypass, laparoscopic adjustable gastric banding, sleeve gastrectomy, and duodenal switch with biliopancreatic diversion (Tarjan, 2016).

**Roux-en-Y gastric bypass surgery.** Roux-en-Y gastric bypass surgery, developed by Edward E. Mason in 1966, is the most commonly performed weight loss surgery (Tarjan, 2016). According to the Mayo Clinic (2017), Mason invented a Y-shaped connection, which created a small pouch at the top of the stomach by cutting the small intestine beneath the main stomach and attaching it to the new pouch. The small pouch was the only part of the stomach that took in food. This drastically limited the
amount of food and liquids patients could comfortably consume (Deloose et al., 2016; Tarjan, 2016).

**Laparoscopic adjustable gastric banding.** Also known as the Lap Band or the Realize Band, doctors considered this procedure the least invasive of all weight loss surgeries (Columbia University, 2017). The procedure entails implanting a soft silicone ring with a balloon in the center at the top of the stomach, thus creating a two-part stomach. The top portion of the stomach became significantly smaller so patients could only eat enough to fill the stomach portion above the band (Altieri et al., 2016; Tarjan 2016).

**Sleeve gastrectomy.** Sleeve gastrectomy involves removing a portion of the stomach and creating a tube-like structure with the remaining section of the stomach (Mayo Clinic, 2017). Reducing the size of the stomach also reduced the amount of food a patient could ingest and possibly reduced the desire to eat as it produced decreased amounts of ghrelin, which regulated appetite (Campbell, 2013; Mayo Clinic, 2017; Tarjan, 2016; Wentzell & Neff, 2015). This type of weight loss surgery did not prevent the absorption of nutrients and calories in the intestines (Mayo Clinic, 2017).

**Duodenal switch with biliopancreatic diversion.** Of all the weight loss surgeries, doctors would not perform the duodenal switch with biliopancreatic diversion procedure unless the patient was morbidly obese with a BMI of 50 or more. This was attributed to the length of time the procedure took to remove a portion of the stomach (Mayo Clinic, 2017; Pata et al., 2013), and the subsequent malabsorptive consequences, which required lifelong, post-surgery micronutrient supplements (Nett, Borbely, & Kroll, 2016). Compared with other bariatric procedures, “duodenal switch/biliopancreatic
diversion (DS/BD) resulted in the greatest sustained weight loss as well as the greatest improvement in comorbid conditions, such as type 2 diabetes mellitus (T2DM) and hypertension” (Dorman et al., 2012, p. 758).

**Commercial Diet Plans**

Commercial diet plans focus on a healthier lifestyle, weight loss, and weight management through healthy eating, portion control, breaking bad habits, and often include a group component for emotional support. Many commercial weight loss programs also involve personalized diet and exercise plans designed to address nutrition, behavior modification, and exercise (U.S. News & World Report, 2017). The following programs ranked in the top 10 commercial diet plans by U.S. News and World Report (2017).

**Weight Watchers.** Weight Watchers was founded in September 1961 by Jean Nidetch (WWI, 2016), and ranked number one for weight loss by U.S. News and World Report in 2016. Nidetch described herself as a 214-pound, overweight homemaker from Queens, New York who gormandized chocolate cookies, but disliked unsuccessful fad dieting. Resultantly, Nidetch reached out to her friends and confessed her food obsession, or her *Frankenstein,* which was the term she used to describe food obsessions. Soon, her friends were meeting weekly at Nidetch’s home and confessed their Frankenstein in an environment that supported compassion, connection, and consideration (Kapner, 2015). Thereafter, Nidetch hosted 40 women in her small apartment, and eventually hosted meetings at other people’s homes (WWI, 2016).

In 1963, at the urging of her friends, Albert and Felice Lippert, Nidetch rented a loft in Queens with the intention of hosting 50 attendees to discuss how changing habits
in a supportive environment helped her and her friends lose weight (WWI, 2016). Even though Nidetch did not advertise the meeting, over 400 people were waiting outside the loft to hear about this new weight loss program. The program experienced rapid expansion and participants who successfully completed the program opened franchises (WWI, 2016).

In 1978, the food plan also included a fitness plan and promoted the benefits of walking and being active. In 1978, H. J. Heinz purchased WWI and the program continued to flourish with over one million members who attended 29,000 meetings in 27 countries (WWI, 2016). Weight Watchers was a major sponsor of Healthy People 2000, a health goals initiative led by the Secretary of Health and Human Services. Consequently, WWI launched Weight Watchers Health Watch 2000 to inform Americans about research directly relating to obesity as a risk factor for a host of chronic diseases such as cancer, diabetes, stroke, and heart disease. Today, Weight Watchers persists in buoying initiatives to offer Americans sensible advice pertaining to determinants of health focused on weight management, nutrition, and physical fitness. Committed to public health and education, Weight Watchers strives to help people change their lifestyles, and includes an online community to build relationships and offer support (Wang & Willis, 2016).

**DASH Diet.** The Dietary Approaches to Stop Hypertension (DASH) Diet was ranked number one by U.S. News and World Report in 2016 and 2017 for best overall diet. It is an eating plan designed to lower blood pressure and garnered attention due to the amount of weight lost by participants. The eating plan does not require a membership and provides daily and weekly nutrition goals based on 2,000 calories per day. However,
the DASH Diet does not discuss physical activity and lacks a social media forum (U.S. News and World Report, 2016).

**The Biggest Loser Diet.** The Biggest Loser Diet was created for the reality television show bearing the same name. According to U.S. News and World Report (2016), the Biggest Loser Diet ranked number 15 in best overall diets. The Biggest Loser Diet promoted six weeks of nutritious foods and extreme physical activity to kick start weight loss. The basic tenets of this diet comprised cutting calories and working out (U.S. News and World Report, 2016).

The Biggest Loser Diet earned critics because it primarily promoted intense physical activity with little attention given to diet and behavioral change (Kravitz, 2016). Several other weight loss related reality television programs recorded the weight loss experience of obese participants in a similar format. Despite the popularity of these shows, they failed to address behavior change required for long-term weight loss and management (Kravitz, 2016). In a study by Klos et al. (2015) of seasons 10-13 of the Biggest Loser (66 episodes), 85.2% of the shows were devoted to physical activity to promote weight loss, 13.5% to diet, and 1.2% to other. Klos et al. (2015) found.

Substantial weight loss is achieved primarily through physical activity, with little emphasis on modifying diet and eating behavior. Although physical activity can impart substantial metabolic health benefits, it may be difficult to create enough of an energy deficit to induce significant weight loss in the real world. Future studies should examine the weight loss attitudes and behaviors of obese individuals and health professionals after exposure to reality television shows focused on weight loss. (p. 639)
Online Weight Loss Programs

Online weight loss programs also included programs synced to mobile devices so users had immediate access to an abundance of information. In 2001, the *Journal of the American Medical Association* found participants who interacted with e-diets that included online support groups, Internet food journals, and exercise advice lost twice as much weight as those who only had access to weight loss information sites (O’Brien et al., 2014). Similarly, a study by Booth, Nowson, and Matters (2008) included two groups, an exercise only group (EX) and a diet and exercise group with dietary goal setting (ED). Across 73 participants (EX group n= 26; ED group, n=27), the ED group fared marginally better than the EX group. Researchers attributed the marginal increase in weight loss to setting dietary goals; however, the researchers concluded an uptake in exercise was highly correlated to sustained weight loss (Booth et al., 2008). Surprisingly, web-based diet programs were introduced in the 1990s. The following examines online weight loss programs in greater detail.

**e-Diets.com.** The eDiets.com site was an aggregator for current, popular diets and had over two million users since it launched in 1997 (Breckenridge, 2006). The site employed the use of an online questionnaire and participants could select a straightforward reduced-calorie plan developed by on-staff nutritionists or select from over 20 other diets, which included Atkins and the Blood Type Diet. Once a participant chose a diet, eDiets offered a weekly meal plan along with recipes and shopping lists. Participants who needed diet options for meals-on-the-go could access choices from restaurant chains, such as Outback Steakhouse, Chili’s, and Subway. For an additional charge, participants could get interactive support via a mentor program that matched
users with more experienced dieters. Correspondingly, participants could connect online for live chats with registered dietitians and other experts (Breckenridge, 2006).

**Meta Real.** Meta Real was a Brazilian, web-based diet reeducation site and used social shaming to promote weight loss (Fazeli, 2012). The site’s Virtual Fridge Lock was a giant, red magnet that interfaced with participants’ social media. Each time participants unlocked the virtual fridge, an alert was blasted to their social media and friends were able to offer support and encouragement (Fazeli, 2012).

**Aherk!** This site utilized Facebook as its platform and escalated public shaming to an entirely new level (Fazeli, 2012). Aherk! was a self-committed blackmailing site that posted unflattering photos of participants to Facebook each time they were unsuccessful in their weight loss journey. The ethos was to leverage public embarrassment and pressure to promote weight loss (Fazeli, 2012).

**SouthBeachDiet.com.** The online version of the South Beach Diet developed by Dr. Arthur Agatston carried a membership fee of five dollars per week and included online social support not contained in the original best-selling book (U.S. News & World Report, 2017). The South Beach Diet contained good carbohydrates, lean protein, and healthy fats to yield a nutrient-dense, fiber-rich diet one could follow for weight loss and weight maintenance for a lifetime (Mayo Clinic, 2017).

**Boot Camp Weight Loss Programs**

The literature offered a myriad of diets that concentrated on nutrition, exercise, a combination of nutrition and exercise, interactive support, and accountability. The experts agreed diets were more effective when accompanied by moderate to vigorous exercise and social support (Dorman et al., 2012). Boot camps offered indoor and
outdoor, military-inspired workout sessions in a group setting that combined calisthenics with strength training and aerobic exercise for high-intensity, interval training. “A 2008 study found that a boot camp class burns 9.8 calories per minute. That adds up to 588 calories in a 60-minute class” (Cuff, 2012, p. 89). An ideal weight loss program joined fitness with diet for optimal weight loss and long-term weight management (Cuff, 2012). The following programs utilized high-intensity interval training (HIIT).

**Buddy Boot Camp.** The Buddy Boot Camp was established in September of 2015 with the intention of recruiting pairs to serve as buddies for workouts, accountability, and fun (Gray, 2017). Although Buddy Boot Camp lacked a structured meal plan, it offered Shakeology meal replacement drinks for participants who wished to lose weight. The workout program spanned two-week intervals with classes offered every morning, mid-day, and evening. Further, Buddy Boot Camp encouraged journaling to “track daily water intake, record their workout and fitness homework, and rate their nutrition” (Gray, 2017, p. 24). Buddies were also encouraged to text each other for support.

**The Camp Transformation Center (TCTC).** TCTC was founded by Dr. Saman Bakhtiar, Alejandra Font, Erick Salgado, and Xavier Sanchez in 2011 (TCTC, 2017). The common thread ethos of the founders centered on transformation through optimal nutrition, unprocessed foods, fitness, and social support. As of June 2017, TCTC consisted of over 70 centers throughout the U.S. and delivered personal training in a group environment. Further, TCTC maintained a private Facebook page for members to participate as passively or actively as they desired. The private Facebook page also allowed members to post questions to trainers and fellow members, as well as search the
site for information (TCTC, 2017). Incorporating a private Facebook page was supported in the literature as social network platforms provided benefits such as “bridging geographical boundaries, connecting with likeminded individuals (which may be particularly helpful if offline support is lacking), and providing support at low cost and 24-hour accessibility” (Jane et al., 2017, p. 16).

The program at TCTC also included a detailed eating plan based on a nutrient-dense diet free of processed foods, along with a minimum of five workout sessions per week and social support. Those who participated in a weight loss challenge were called challengers and required to lose 20 pounds in six weeks to meet their contracted goals. The cost of a six-week challenge was $497.00, which was refunded to the challenger upon losing the contracted weight and meeting all contract goals (TCTC, 2017).

**Warrior Fitness and Wellness Camp (WFWC).** WFWC is owned by Tchicaya Missamou and located in Santa Clarita, California. WFWC has over 1,000 members throughout Los Angeles County and the Santa Clarita Valley. Missamou is a former officer of the U.S. Marine Corps (USMC) and applied what he learned in the USMC’s boot camp to combine fitness by means of a commercial gym and weight loss through his wellness center (Mullen, 2017).

**Post-Diet Weight Gain**

To fully comprehend weight loss and dieting, the reasons why dieters regain weight must be considered. According to Kravitz (2016) and Sagayama et al. (2014), four components of post-diet weight gain were metabolism (energy expenditure), rate of weight loss, self-weighing, and social support. Madigan et al. (2015) conducted a randomized control trial of 560 adults in a weight loss program who lost more than 5% of
their body weight over a 12-week period and found weight gain after dieting was “common and long-term weight control remains a critical challenge” (p. 526).

Further, weight gain was especially common following weight loss and often participants did not recover from an initial lapse (Madigan et al., 2015). Moreover, post-diet weight gain was a concern as weight cycling (also known as yo-yo dieting) correlated to obesity and metabolic risk factors (Mackie, Samocha-Bonet, & Tam, 2016). Both Kravitz (2016) and Madigan et al. (2015) agreed daily, self-weighing increased accountability and helped prevent weight gain as participants became more cognizant of their weight. Self-motivation also played a key role in weight loss maintenance (Mata et al., 2009; Metzgar, Preston, Miller, & Nichols-Richardson, 2015).

Additionally, securing a social support system was an effective strategy during weight loss and as an intervention after weight loss (Sagayama et al., 2014). McVay et al. (2015) portended pre-diet macronutrient composition (fats, carbohydrates, and protein) affected post-diet weight gain. In a study of two groups of Durham Veterans Affairs outpatients, group one (n = 71) followed a low-carbohydrate diet and group two (n = 73) followed a low-fat diet. The study found participants who consumed a high-carbohydrate diet prior to commencing the low-carbohydrate diet lost weight more slowly than participants of the low-fat diet but participants of the low-carbohydrate diet experienced less post-diet weight gain (McVay et al., 2015).

Social Determinants to Health

According to the Office of Disease Prevention and Health Promotion (ODPHP) (2017), social determinants of health were environmental conditions found in “homes, schools, workplaces, neighborhoods, and communities” (p. 1). The WHO was founded
in 1948 to “provide objective and reliable information and advice in the field of human health” and elucidated health inequalities” (Wilkinson & Marmot, 2003, p. 4). A report by the WHO (2012) suggested:

To consider social determinants of health duly in the assessment of global needs for health; to provide support to Member States in implementing the Rio Political Declaration on Social Determinants of Health; to work closely with other organizations in the United Nations system on advocacy, research, capacity-building and direct technical support to Member States; and to continue to convey and advocate the importance of integrating social determinants of health perspectives into forthcoming United Nations and other high-level meetings related to health and/or social development. (p. 1)

Accordingly, WHO recognized the social determinants of health standards to help “promote awareness, inform debate, and above all, action” to assist countries with understanding the root causes of disease and well-being from multiple lenses (Wilkinson & Marmot, 2003, p. 5). This included the behavioral aspects associated with nutrition and physical activity in relation to one’s milieu and ancillary factors such as unemployment, social isolation, and socioeconomic status (WHO, 2003). The WHO social determinants of health include the social gradient, stress, early life, social exclusion, work, unemployment, social support, addiction, food, and transport, all of which influenced behavior.
Social Gradient

Social gradient focused on one’s life expectancy and how occupational class contributed to economic stress. Stress connected to anxiety, social isolation, and lack of control over work and home life affected the cardiovascular and immune systems, which engendered high blood pressure and depression (WHO, 2012). Moreover, “social and economic conditions and their effects on people’s lives determine their risk of illness and the actions taken to prevent them becoming ill or treat illness when it occurs” and “the poorest of the poor around the world have the worst health” (WHO, 2016, pp. 1-2).

Stress

Psychosocial factors such as worry, anxiety, and poor coping mechanisms devastated the cardiovascular and immune systems, which proved detrimental to health and led to premature death (WHO, 2003). The literature likewise revealed psychosocial risks amassed over time. This diverted essential energy and resources away from physiological processes required for long-term health and wellness (WHO, 2003).

Early Life

Research connected the origins of adult health to childhood and even preceded birth. Poor health in pregnancy was a plausible prognosticator of fetal health issues, which possibly caused slow growth and subsequent adult developmental issues such as reduced physical, cognitive, and emotional function (Wilkinson & Marmot, 2003). Researchers recommended an increase in education and equal access to education for mothers, as well as good nutrition and prenatal care. Similarly, emotional attachment supported from birth was integral to pro-social behavior and cognitive development (Wilkinson & Marmot, 2003).
Social Exclusion

Wilkinson and Marmot (2003) contended, “Life is short where its quality is poor” and “hardship and resentment, poverty, social exclusion, and discrimination cost lives” (p. 16). Deprivation and unemployment increased the rate of premature death, as housing, education, and transportation were deficient. Deprivation, unemployment, racism, stigmatization, and poor-quality environments also precipitated exclusion from society. As a result, these conditions prohibited access to education and training, and were potentially psychologically injurious (Wilkinson & Marmot, 2003).

Work

Workplace stress amplified the risk of disease (Wilkinson & Marmot, 2003). “In general, having a job is better than having no job…but the social organization of work, management styles, and social relationships in the workplace all matter for health” (Wilkinson & Marmot, 2003, p. 19). The literature on workplace stress flourished over the past 10 years (Nelson & Simmon, 2003). “Workplace stress is perhaps the most common complaint among workers and a major contributor to absenteeism, presenteeism (reduced productiveness), and low morale” (Chapman, 2006, p. 431).

Kagan, Kagan, and Watson (1995) conducted a three-year study on psychoeducational programs and job stress reduction. Participants included 373 emergency medical services (EMS) employees of the Houston Fire Department. The study utilized the Maslach Burnout Inventory (MBI), the State-Trait Anxiety Inventory, Beck Depression Inventory (BDI), and Kagan Affective Sensitivity Scale (KASS). The study’s psychoeducational programs included a physiological approach, skills and coping approach, and interpersonal awareness approach. The physiological approach integrated
progressive muscle relaxation training, meditation, nutrition, and exercise regimens. The skills and coping approach was comprised of assertiveness training, micro-counseling, and human relations training. The study’s interpersonal awareness approach encompassed insight therapy, cognitive-affective therapy, stress management, and interpersonal process recall. Kagan et al. (1995) concluded psychoeducational programs had a major impact on reducing damage to the workplace and worker, with interpersonal awareness activities most effective over the long term.

Adams (2009) contended stress in the workplace influenced employee effectiveness and healthcare costs for organizations. In a study with a control group utilizing before and after questionnaires over a six-month period, in combination with a four-day residential training program, poor health and excessive job pressure contributed to depression and stress. The participants who completed the questionnaires and residential program realized an increase in positive lifestyle change. Further benefits included improvement in stress management skills, regular relaxation practice, regular vigorous exercise, awareness of consequences of poor stress management, maintained recommended weight, and self-knowledge (Adams, 2009).

Shah (2004) described a study of banking employees that found complaints about eyestrain were indicative of job stress and a study of utility workers that found stress possibly nullified the heart healthy benefits of a physically demanding job. A study of Swedish postal workers showed the stress of being bullied at work and workplace reorganization were among the leading reasons employees took sick time (Nelson & Simmon, 2003).
The attribution of stress to workplace absenteeism, productivity, and job satisfaction aligned with findings of Patterson, Bennett, and Wiitala (2005). In their study of 539 workers, they found positive unwinding was an important resource with potential relevance to organizations. Positive stress unwinding behaviors encompassed meditation, exercise, and reading, versus substance unwinding via alcohol, medication, drugs, and tobacco. The researchers randomly assigned employees to one of two prevention trainings or a control group. Analyses indicated both trainings improved positive unwinding (compared to controls) beyond the effects of protective factors (Patterson et al., 2005).

**Unemployment**

Unemployment and job instability increased health risks (Strully, 2005). Accordingly, unemployed people and their families suffered a marked risk of premature death. Further, the health effects incited by a lack of healthcare, debt, and psychological consequences led to heart disease and depression (Strully, 2005). However, simply having a job did not prevent physical and mental health issues as job quality played a salient role in the process (Wilkinson & Marmot, 2003).

**Social Support**

“Friendship, good social relations, and strong supportive networks improves health at home, at work, and in the community” (Wilkinson & Marmot, 2003, p. 23). Social isolation and exclusion played a role in poverty, depression, pregnancy complications, and chronic diseases, which enhanced the risk of premature death and diminished chances of survival after a heart attack (Wilkinson & Marmot, 2003). The
literature revealed the benefits of quality social relationships and social cohesion in
protecting people and their health (Asante, 2015).

**Addiction**

Addiction was a complex social determinant of health involving overweight and
obesity issues viewed as addictions, in addition to alcohol, drugs, and tobacco abuse.
One’s social setting affected addiction given “drug use is both a response to social
breakdown and an important factor in worsening the resulting inequalities of
health…offering users a mirage of escape from adversity and stress” (Wilkinson &
Marmot, 2003, p. 25). Consistent with the findings of Wilkinson and Marmot (2003),
WHO (2012) designated economic and social disadvantages steered addiction, which
provoked descending social position.

**Food**

“A good diet and adequate food supply are central for promoting health and well-
being. A shortage of food and lack of variety cause malnutrition and deficiency diseases”
(Wilkinson & Marmot, 2003, p. 27). The juxtaposition of food plenty (which caused
cardiovascular diseases, diabetes, cancer, eye disorders, obesity, and death) and food
scarcity (which led to malnutrition, deficiency diseases, dementia, and death caused by
insufficient vitamins and minerals) exist simultaneously in communities (Wilkinson &
Marmot, 2003). Low-income families, the elderly, and unemployed were least likely to
eat well and more inclined to choose inexpensive, high-fat foods. Further, grocery stores
offering quality fruits and vegetables were often unavailable in poorer communities
Transport

The design of suburban communities discouraged and even prohibited walking and cycling, which was connected to the rise in overweight and obesity. Additionally, walkability ratings were employed to denote a community’s proximity between housing and provisions (Glazier et al., 2014). America’s dependence on cars was health-damaging and isolated people from social interaction (Wilkinson & Marmot, 2003).

Social Media Platforms

Current studies linked positive health behavior change to social media networking (Balatsoukas, Kennedy, Buchan, Powell, & Ainsworth, 2015; Laranjo, 2015). Dong and Wu (2015) clarified how the advances in computing technology resulted in a proliferation of computer-based services, ranging from information services to online health services, social networking services, and more. An abundance of electronic communication platforms are classified as social media (Dong & Wu, 2015).

Kaplan and Haenlein (2010) defined social media as “collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds” (p. 59). Specific media types classified as sub-factors of social media encompassed Facebook, Twitter, and Pinterest (Selwyn, 2011; Wright & Hinson, 2012). The following describes the most prominent social media platforms used by weight loss and fitness programs, and the advantages and disadvantages of utilizing these platforms for social networking.

Facebook

Mark Zuckerberg and his Harvard roommate, Eduardo Saverin, created Facebook in 2004. Facemash, Friendster, and MySpace, preceded Facebook and was initially only
available to Harvard students. Soon thereafter, Facebook expanded to include students at other Boston colleges. Facebook became a public social network, allowing participants to communicate in real time, with a mission “to give people the power to share and make the world more open and connected” (Facebook, 2016).

Facebook developed into one of the most preferred social media sites given its features such as friends, open groups, closed groups, news feeds, ads, and private messaging, as well as applications such as events and calendars (Bertolucci, 2012; Facebook, 2016). Although Facebook had less forward-facing personalization than MySpace, it provided opportunities for development of branded pages and analytics for site administrators (Facebook, 2012). Consequently, responsiveness and commitment to the needs of users led to the success and dominance of Facebook (Bertolucci, 2012).

A study by Napolitano, Hayes, Bennett, Ives, and Foster (2013) followed 52 college students who used technology platforms such as Facebook and text messaging for eight weeks. The students who used Facebook in combination with text messaging reported the highest weight loss. Consequently, health-related programs began using open and closed Facebook sites to target prospective weight loss and fitness participants (Buglass, Binder, Betts, & Underwood, 2017; Ferrar et al., 2014; Pupino, 2015; Quintanilla & de la Pena, 2015). This was evidenced by over 252,000 views on the Weight Watchers page in 2017 and 23,740 views on TCTC’s closed group page in 2017.

Google+

Google+ launched in 2010 to replace Google Buzz and underwent a redesign in 2015 (Cooper, 2016). It was the most rapidly developing social networking platform with over 111 million active users among friends, family, and business connections who
sought to reproduce the way followers interrelated offline by assembling and sharing information. The site’s slogan aimed to promote real-life sharing rethought for the web (Cooper, 2016).

**Instagram**

Unlike Facebook and Twitter, Instagram is a photo social platform launched in 2010. Instagram was an instant hit and gained over one million users within two months of launching. In 2012, Facebook purchased Instagram, thus enabling a reciprocal use between Facebook and Instagram by users. Instagram has mobile and computer applications allowing users to take a photo and customize its features to appear like a professional photo (Instagram, 2016).

Notwithstanding its one-dimensional application compared to Facebook, Instagram had over 700 million users as of April 2017, and many weight loss and fitness programs began to post creative content to inspire and intrigue followers. According to *U.S. News and World Report* (2017), three major uses of Instagram for weight loss and fitness programs were to ask questions, connect with other social networking sites, and encourage participation in upcoming events.

**Twitter**

Propelled by the concept of status updates on Facebook, Twitter commenced as a micro-blogging application wherein users created and sent messages within a 140-character limit (Kaplan & Haenlein, 2010). In 2017, Twitter increased the character limit to 280 characters and utilized hashtags (#), which were searchable and open for all Twitter users (Statista, 2017). By 2017, Twitter had over 330 million users and provided hashtag analytics that generated over a million dollars of cumulative revenue for
companies such as the Dell Corporation by means of sales alerts (Kaplan & Haenlein, 2010; Statista, 2017).

The main advantage of Twitter in weight loss and fitness programs was the ability to respond directly to the main administrator (Twitter handle) and develop communications and alerts based on a myriad of topics (Turner-McGrievy & Beets, 2015). For example, weight loss and fitness programs often used #weightloss to promote specials and highlight members’ successes. Another advantage of Twitter was the concept of having followers, comprised of individual accounts, that evoked the feeling of being right next to someone in real time by sending Twitter messages called tweets (Carlson, 2011). Essentially, weight loss and fitness programs could create accounts and with a single tweet, immediately display messages about their current activities to all followers. Additionally, Twitter provided a platform for a breadth of conversation topics in real time and accessible to participants, trainers, gym owners, and staff members to communicate with external users (Turner-McGrievy & Beets, 2015).

**Historical Context of Social Psychology Frameworks and Theories**

**Social Ecological Model**

In 1979, renowned psychologist Urie Bronfenbrenner developed ecological system theory to explain how complex layers of five socially organized subsystems influenced human development: microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1994; Neal, & Neal, 2013; Schölmerich & Kawachi, 2016). Bronfenbrenner asserted, “To understand human development, one must consider the entire ecological system in which growth occurs” (Bronfenbrenner, 1994, p. 37). Recent literature revealed how Bronfenbrenner’s model evolved over three phases from
an ecological model to a bioecological model. The focus shifted to elucidate how one’s biology and influence from immediate family, community, and society constructed the primary environment driving development (Rosa & Tudge, 2013; Ungar, Ghazinour, & Richter, 2013).

Bronfenbrenner’s theory provided a lens for recognizing barriers to physical activity (Stankov, Olds, & Cargo, 2012). According to the CDC (2007), the social ecological model offered a basis for health professionals to correlate weight behaviors to a person in relation to society, community, organization, interpersonal, and individual. “Researchers have begun to recognize the significant impact of the social environment on physical activity and have called for the identification and development of innovative strategies that can assist in shifting social and cultural norms to influence individual behavior” (Vrazel, Saunders, & Wilcox, 2008, p. 2).

**Microsystem.** According to Bronfenbrenner (1994), the microsystem was the closest layer to a human and included settings such as family, school, work, and peer groups. This system also incorporated bi-directional influences comprised of relationships. Specifically, relationships associated with how one’s beliefs and behaviors affected others and how the behaviors and beliefs of others influences the individual (Paquette & Ryan, 2001). Bronfenbrenner (1994) stated:

A microsystem is a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, and inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment. (p. 39)
**Mesosystem.** The mesosystem was the layer connecting two or more settings of the developing person. Examples of these connections encompassed the relations between home and work, as well as the relations between work and school. In essence, the mesosystem was a system of microsystems (Bronfenbrenner, 1979; Paquette & Ryan, 2001).

**Exosystem.** This layer of the model concerned the larger social system in which the developing person did not operate directly, yet indirectly influenced processes of the developing person’s setting via the workplace, social networks, and community networks (Berk, 2000). For instance, as parents, a child’s school and the neighborhood peer group were two settings in which the developing person did not have direct contact but still had influence on the individual (Korinek, 2015).

** Macrosystem.** The macrosystem referred to the outermost layer of one’s environment. The macrosystem was not as connected to the framework as it was to cultural norms, beliefs, values, resources, and laws (Berk, 2000). Paquette and Ryan (2001) emphasized this layer of the model was linked to parental beliefs system lifestyle, which in turn fueled one’s outlook on a breadth of social issues. Expressly, Bronfenbrenner (1994) described the macrosystem as the “societal blueprint for a particular culture or subculture” (p. 40).

**Chronosystem.** This system connected the element of time and significance of events on development (e.g., death of a parent, divorce, loss of a job, physiological changes). One’s biology and environment impelled change and development. Similarly, the chronosystem changed or remained constant based on the developing person’s
characteristics and environment, such as changes in socioeconomic status, employment, family structure, self-efficacy, and chaos in everyday life (Bronfenbrenner, 1994).

Social Ecological Model in Practice

The social ecological model served to help increase health literacy and functions as a framework for creating multiple interventions for weight loss and fitness guidelines (Estabrooks, 2011; Schölmerich & Kawachi, 2016). “Bronfenbrenner sees the instability and unpredictability of family life we’ve let our economy create as the most destructive force” to human development (Addison, 1992, p. 18). Bronfenbrenner applied a holistic perspective to human development to study humans and their environments and related the breakdown of the family to dual income households and long work hours, which was concomitant with the alienation, delinquency, and apathy of Generation X and Millennials (Tregaskis, 2015).

A review of health promotion programs over 10 years revealed most programs focused on the individual as opposed to how one’s environment affected weight loss and fitness (Kok, Gottlieb, Commers, & Smerecnik, 2008). Resultantly, a shift from behavioral psychology moved to embrace programs that employed the ecological approach in public health. A social ecological approach resulted from a community-wide health initiative concentrated on poor nutrition, smoking, and physical activity in school, community, and education settings (Nigg et al., 2005). A few salient environmental changes from the initiative included adding water and 100% fruit juice to vending machines and offering healthier choices in school cafeterias.

Researchers utilized the social ecological model as a framework for comprehending the physical activity of African American women and consequently
recommended intervention programs for weight loss (Fleury & Lee, 2006; Vrazel et al., 2008). Schölmerich and Kawachi (2016) posited the social ecological model alone was not sufficient for creating multilevel interventions for health. Thus, researchers advised combining complementarity principle theory and risk compensation theory to confront the gap between theory and practice.

**Motivational Theory**

In 1959, White (as cited by Deci & Ryan, 2000) surmised in his effectance motivation theory that human organisms found inherent satisfaction in expanding their own capabilities by maximizing competence. Empirical psychologists such Cofer and Appley (1967) expanded White’s research to elucidate what drives humans to act beyond competence and found invigoration attributed to deviating from one’s norm, driving motivation. Rigby, Deci, Patrick, and Ryan (1992) delineated motivation into two distinct types, extrinsic and intrinsic.

**Extrinsic motivation.** This type of motivation was distinct from intrinsic motivation as it focused on behavior driven by external incentives (Deci, 1975). Four types of extrinsic motivation were described: external regulation, introjected regulation, identified regulation, and integrated regulation (Deci & Ryan, 2000). Based on the perception of the level of control, the individual became more autonomous, self-determined, and proactive (Deci & Ryan, 2000).

**Intrinsic motivation.** Gilbert, Fiske, and Lindsey (1998) declared intrinsic motivation only occurred when one found pleasure in an activity unreinforced by external forces. According to Drosman (2015), the fulfillment of basic psychological needs was integral to greater intrinsic motivation and psychological well-being. Additionally, an
individual enjoyed activities when they were unreinforced by peripheral pressures (Pittman, 1998).

**Self-Determination Theory**

Research concerning behavior and motivation to adhere to activities commenced in the early 1800s (Beck, 1978). This study was grounded in Deci and Ryan’s (1985, 2000) self-determination theory (SDT), which stemmed from motivation theory. SDT proclaimed humans possessed a natural desire to develop and elevated a sense of self (Deci & Ryan, 2002). SDT focuses on psychological needs necessary for growth and factors that foster them as need fulfillment results in greater self-motivation (Bethencourt, 2012; DeHaan, Hirai, & Ryan, 2015).

This theory of motivation differed from extrinsic motivation theory, which embraced motivation based on external rewards such as recognition and awards, and focused on intrinsic motivation, which involved an internal locus driven by the need for knowledge, growth, and autonomy (Brown, 2007; Vallerand, 2000). Specifically, this theory signified people behave and participate in various activities based on a need to grow and gain fulfillment via a continuum of six styles of behavior: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic regulation (Deci & Ryan, 1985). The six styles of behavior ranged from high self-determination to low self-determination.

Evaluation of one’s self-determination at the personality level related to lasting motivational orientation toward activities, growth, and change (Mask, 2011). Deci and Ryan (1985, 2000) suggested one’s environment could impede human development and growth. In addition to the six styles of behavior, Deci and Ryan (2000) postulated
competence, relatedness, and autonomy were three requisite psychological needs integral to fulfillment and self-determination. Correspondingly, the degree to which individuals fulfilled the needs of competence, relatedness, and autonomy directly correlated to levels of intrinsic motivation (Drosman, 2015). Ilardi, Leone, Kasser, and Ryan (1993) studied 117 shoe factory employees and found a direct correlation between job satisfaction and self-esteem, and fulfillment of basic psychological needs of autonomy, competence, and relatedness.

**Basic psychological needs theory.** The basic psychological needs mini-theory of SDT focused on basic requirements for growth and well-being. Specifically, the basic needs of SDT were autonomy, competence, and relatedness (Deci & Ryan, 2000, 2002). Further, this mini-theory explicated how the three basic needs led to self-determined behavior (Deci & Ryan, 2000; Ryan & Deci, 2000).

**Competence.** This requisite psychological need of SDT addressed the need for knowledge as well as confronting and conquering challenges (Deci & Ryan, 2002). Accordingly, competence in this context embraced self-efficacy and one’s ability to influence change in the environment (Ryan & Deci, 2000). Similarly, competence referred to facing and mastering challenging tasks (Ntoumanis, 2005). Williams, McGregor, King, Nelson, and Glasgow (2005) affirmed competence was a basic human need and the degree of competence established short-term and long-term implications related to one’s well-being.

**Relatedness.** The second basic psychological need of SDT was relatedness or connectedness (Deci & Ryan, 1985, 2000, 2002). Relatedness concerned an innate need
to belong to a group and connect with others (Ryan & Deci, 2000). Further, relatedness embodied the need to be cared for and loved (Baumeister & Leary, 1995).

**Autonomy.** The third basic psychological need of SDT was autonomy, which was the inherent need to have control over one’s environment and decision-making (Williams et al., 2006). Autonomy also implicated environmental conditions such as imposed goals and deadlines (Ryan & Deci, 2000). Moreover, autonomy was salient to children in social settings and adults in distinct environmental settings ranging from the workplace to relationships (Fernet, Guay, & Senecal, 2004).

**Summary of Literature Review**

Weight loss and fitness programs are abundant, yet weight issues existed since the beginning of history, and current sedentary lifestyles and poor diets contributed to obesity (Harmon, 2016). Further, losing weight and maintaining a healthy BMI was notoriously difficult, regardless of the abundance of information on the Internet (Coughlin et al., 2016). Social media sites continued to progress and expand the ways weight loss and fitness participants communicated. Virtual communication group members developed online communities and connected via diverse social media such as Facebook, Twitter, and Instagram. Although billions of people use social media, the research regarding how to leverage social media to support weight loss and fitness remained limited. Moreover, despite studies conducted on social media regarding diets, fitness programs, and consumerism, as well as psychology-based studies that showed a relationship between cognitive thought processes related to social media, a dearth of research persisted in the field of private social media and its impact on weight loss and fitness program participation, adherence, and accountability.
Conversely, seminal theorists and researchers correlated behavior to environment. In particular, renowned psychologist, Urie Bronfenbrenner, developed social ecological theory to explain how environmental systems shaped human development and behavior. Deci and Ryan (1985, 2000), Neal and Christens (2014), and Onwuegbuzie et al. (2013) expounded on Bronfenbrenner’s work to link the absence of environmental interactions with people as detrimental to one’s emotional health and an impediment to one being physically active. Accordingly, Kurt Lewin’s cognitive approach to motivation focused on how certain behaviors helped project results for weight loss. This buoyed the philosophy of weight loss and fitness programs such as Buddy Boot Camp and TCTC, which incorporated fitness and the buddy system to motivate and support participants, promote accountability, and improve adherence.
CHAPTER III: METHODOLOGY

Overview

Methodology is the meticulous description of how to conduct a study and includes components such as research design, types of data, population, sample, purpose statement, and research questions (Creswell, 2014). This chapter presents research methods and procedures applied to this study. Accordingly, this chapter includes the (a) purpose of the study; (b) research questions; (c) research design; (d) types of research methods, with rationale regarding appropriateness; (e) description of the population and sample; (f) instrumentation; (g) and data collection procedures.

Purpose Statement

The purpose of this mixed-methods sequential explanatory study was to examine the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability, adherence, and social connectedness. The study also sought to examine the relationship between demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ frequency of use of private social media and their level of accountability, adherence, and social connectedness. Lastly, the study sought to explore weight loss and fitness program participants’ perceptions of the impact of frequency of use of private social media on their level of accountability, adherence, and social connectedness.

Research Questions

The research questions that guided this study were:
1. What is the relationship between weight loss and fitness program participants' frequency of use of private social media and level of accountability?

2. What is the relationship between weight loss and fitness program participants' frequency of use of private social media and level of adherence?

3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?

4. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and frequency of use of private social media?

5. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of accountability, adherence, and social connectedness?

6. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of adherence?

7. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and level of social connectedness?
8. How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?

9. How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?

**Research Design**

Research designs are specific types of inquiry with qualitative, quantitative, and mixed-methods approaches providing specific direction for procedures in a research study (Creswell, 2014). Additionally, the design determines the application of the research method to answer the research questions. Research design also falls into one of two categories—explorative or conclusive (Roberts, 2010). Qualitative studies “generate words that describe people’s actions, behaviors, and interactions; whereas, quantitative studies generate numbers derived from questionnaires, tests, and experiments” (Roberts, 2010, p. 165).

This research study employed a mixed-methods sequential explanatory design wherein phase one consisted of a quantitative, online survey. Phase two then consisted of semi-structured telephone and face-to-face interviews. The researcher implemented quantitative and qualitative research procedures and analyses to achieve a more in-depth assessment of the topic.
Method and Rationale

A mixed-methods sequential explanatory approach was the best fit for this study as it “provides for a more comprehensive picture of what is being studied, emphasizing quantitative outcomes as well as the process that influenced the outcomes” and utilized multiple ways to answer a research problem (McMillan & Schumacher, 2010, p. 401). Accordingly, a mixed-methods sequential explanatory study expands the qualitative results to support the explanation and interpretation of the findings of a quantitative study. The sequential nature of this approach encompassed a quantitative survey followed by semi-structured interviews. Figure 3 is a graphic representation of the mixed-methods sequential explanatory approach.

Figure 3. Mixed-methods sequential explanatory research design.

Specifically, utilization of mixed-methods research “combines quantitative and qualitative forms of research that include philosophical assumptions, qualitative and quantitative approaches, and the mixing of both approaches in a study” (Creswell, 2014, p. 244). Additionally, a mixed-methods study can include a quantitative survey to “provide a numeric description of the trends, attitudes, or opinions of a population by studying a sample of that population” (Creswell, 2014, p. 13). The qualitative interviews were salient to this mixed-methods study as trust and rapport played an integral role in exploring how participation in private social media affects adherence to a weight loss and fitness program. This method allowed the researcher to take an empathic approach and
focus on the experience of the participants in a social context. Additionally, this study concentrated on the single phenomenon of private social media usage in relation to accountability, adherence, and social connectedness in weight loss and fitness programs, and reported the rich stories of the participants.

Although a mixed-methods sequential explanatory study was deemed most befitting, several alternative research methods were considered and reviewed for suitability, including ethnography, phenomenology, and heuristic inquiry. Phenomenology required the subjects to give a description of a lived experience. It was determined to be an unfitting selection for this study as the goal of this study was to obtain the most authentic data, and Patton (2015) explained phenomenology made it difficult to detect or prevent researcher bias and created a tendency to guide subjects to a desired result.

Heuristic inquiry required the contemplations and experiences of the researcher (Creswell, 2014). This inquiry methodology was also determined to be an inappropriate choice for this study as this form of inquiry risks bias and is insufficient and impractical. The researcher also considered descriptive research as it used “surveys and interviews along with interval data such as a Likert scale” (McMillan & Schumacher, 2010). Accordingly, the researcher envisaged a generic qualitative method as it was “a method that simply seeks to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved” (Merriam, 1998, p. 11). Roberts (2010) suggested qualitative researchers “are interested in the meanings people attach to the activities and events in their world and are open to whatever emerges (p. 143).

Ultimately, the researcher applied a social constructivist lens as “individuals seek
understanding of the world in which they live and work…and develop subjective meanings of their experiences” (Creswell, 2014, p. 9).

Population and Sample

Population

Population refers to all the subjects from whom a researcher is interested in studying and drawing conclusions (Creswell, 2014). The population for this study consisted of 3,000 participants from TCTC and 1,000 participants from WFWC weight loss and fitness programs throughout the United States. Studying weight loss and fitness program participants such as those from TCTC and WFWC was important as these programs included diet, fitness, and private social media.

Sample

A sample is a smaller group within the target population the researcher intends to study and then make inferences to the population given the attributes of a sample likely reflect the attributes of the population, which denotes generalization (Flores, 2015; Patten, 2012). Although an entire population would have been ideal to use to gather information, it is usually unfeasible due to the sheer number and geographic location of participants in a specific population (Robert, 2010; Salkind, 2009). For the quantitative phase of this study, the researcher invited all 4,000 members to participate in the online survey. Of the 4,000 members, 356 completed the online survey for a response rate of 8.9%.

Sampling Procedures

Many qualitative sampling methods exist, which include random, convenience, and stratified. According to McMillan and Schumacher (2010), convenience sampling is
“less costly and time-consuming…and usually assures a high participation rate” (p. 140). For the qualitative phase of this study, the researcher employed a convenience sample based on the availability of the respondents from the online survey who volunteered to be interviewed, followed by stratified sampling.

A convenience sampling method offered ease for selecting participants based on their availability and purposeful sampling allowed the researcher to select a percentage of females and males who mirrored the gender population of the online respondents. A convenience sampling method allowed the researcher to select 15 participants for interviews based on availability and proximity, and stratified sampling allowed the researcher to select the first 11 females and 4 males to mirror the gender proportions represented by the online respondents. Further, a convenience sample beffted this study due to the size of the population and the need to elicit volunteers.

The sample consisted of 15 participants from TCTC and WFWC who participated in weight loss and fitness programs and decreased their BMI to 25 or below. The researcher employed convenience sampling involving participants available by telephone throughout the U.S., or who lived within two hours of Irvine, California. All participants received pseudonyms to protect their identity and safeguard confidentiality. The participants in this study represented various ages, races, relationship statuses, and socio-economic levels.

**Background of the Researcher**

With over 25 years in higher education, the researcher possessed experience in teaching, research, admissions, outreach, and professional development. She had extensive expertise in student recruitment, organizational change, training, and corporate
networking. Further, she was a lifelong learner, committed to helping adult learners achieve their educational goals. The researcher was also a participant of TCTC in January of 2016. To mitigate possible bias, the researcher used a mixed-methods study and worked with an external reviewer who double-coded 10% of the qualitative data to ensure reliability credibility of the codes.

Instrumentation

Instrumentation refers to “all of the instruments used to collect data” (Roberts, 2010, p. 151). Instruments include questionnaires, surveys, interview protocols, observation forms, and document review rubrics (Roberts, 2010). Similarly, instruments must be appropriate for the population, setting, research questions, and variables of interest (Creswell, 2014). Instrumentation for this study included an online questionnaire and semi-structured interview questions.

Questionnaire

This study utilized a quantitative, online questionnaire administered via SurveyMonkey®. The questionnaire consisted of 15 questions with seven-point Likert scale response options and a section for comments. Additionally, the questionnaire asked participants if they were interested in volunteering for a follow-up interview conducted by telephone or face-to-face.

Interviews

Patton (2015) stated researchers should know what they want to find out and listen attentively to whether the question was answered. Additionally, “qualitative inquiry strategically, philosophically, and methodologically aims to minimize the imposition of predetermined responses such as fixed surveys. Questions should be open-
ended so people can respond in their own words” (Patton, 2015, p. 446). A semi-structured interview refers to flexibility afforded the interviewer to deviate from the predetermined questions to offer elucidation to the participant or probe deeper for clarification when a response is too brief (Creswell, 2014; Patten, 2012; Roberts, 2010).

The researcher followed “interview protocol by providing written directions for conducting the interview, as well as a standard set of predetermined questions to be asked of all participants” (Patten, 2012, p. 153). For purposes of this research study, the interviews occurred by telephone and face-to-face using semi-structured, open-ended interview questions recorded by the researcher and transcribed by a third-party transcriptionist. The researcher allotted two hours per interview; however, flexibility was employed for participants who needed additional time to respond.

Validity and Reliability

Validity

Validation of findings in research occurs when findings accurately represent the phenomenon and “the degree to which the scientific explanations of phenomena match reality” (McMillan & Schumacher, 2010, p. 104). Validity also determines the precision of the findings from the viewpoint of “the researcher, participant, or the readers of an account” and “addresses trustworthiness, authenticity, and credibility” (Creswell, 2014, p. 201). To buoy the validity and reliability of this study, the researcher used multiple data collection methods to triangulate findings. Specifically, the researcher utilized a quantitative, online survey and qualitative telephone and face-to-face interviews to further explain the quantitative findings. To increase the validity of the findings, the researcher used external validity for the online questionnaire data in hopes of
generalizing the results. For the qualitative interviews, only those who completed the online survey were included in the convenience sample. The researcher applied member checking during data collection, and participant review to ensure transcribed interview responses were accurate. Further, the researcher emailed the interview notes from the qualitative interviews to participants to review for accuracy.

Reliability

Reliability is “the degree to which your instrument consistently measures something from one time to another” (Roberts, 2010, p. 151). To ensure reliability, this study employed intercoder reliability to “check the consistency between raters,” which is necessary with open-ended questions (Roberts, 2010, p. 152). Intercoder reliability is an essential element of content examination and although intercoder reliability does not ensure validity, the data and interpretation of the data are deemed invalid in the absence of intercoder reliability (Creswell, 2014; Lombard, Snyder-Duch, & Bracken, 2004).

To comply with the findings in the literature, an external examiner who was a qualified researcher and university vice-president coded 10% of the data and verified a minimum of 80% accuracy. Correspondingly, the questions for the survey were adapted from a survey developed by Dr. Monica Shukla (Appendix A), who gave permission to use and alter her questionnaire (Appendix B). According to Roberts (2010), “it is appropriate to change wording or eliminate questions when modifying an instrument for a different population” (p. 152).

Types of Data

The types of data collected for this study included a quantitative, online survey distributed to over 4,000 participants of TCTC and WFWC, and telephone and face-to-
face interviews. Quantitative research “maximizes objectivity by using numbers, statistics, structure, and control” (McMillan & Schumacher, 2010, p. 23). Therefore, quantitative data were crucial for measuring and gaining insight into trends, outlooks, and ideas aligned with statistically significant differences to explicate how private social media usage influenced participant accountability, adherence, and social connectedness in weight loss and fitness programs. Qualitative research describes attributes and characteristics of a thing or phenomenon based on interviews, observations, or evaluations (Creswell, 2014). This study utilized telephone and face-to-face interviews, which allowed for narrative descriptions that helped structure the participant experiences. The telephone and face-to-face interviews were comprised of 22 semi-structured questions (Appendix C).

**Data Collection Procedures**

On March 2, 2017, the Brandman University Institutional Review Board (BUIRB) reviewed and approved this research prior to data collection. Prior to collecting data, the researcher informed participants of their rights and explained the procedure for maintaining their confidentiality throughout the process. To commence the first phase of data collection, the researcher gained agreement from the co-founder of TCTC, Dr. Saman Bakhtiar, and the owner of WFWC, Tchicaya Missamou, to distribute the online, electronic survey link to members through their private social media sites (see Appendix D for agreements and Appendix E for the Facebook message).

**Phase I: Quantitative**

This mixed-methods sequential explanatory study consisted of two phases. Phase I consisted of an electronic survey and was followed by Phase II, which consisted of
semi-structured interviews. Volunteers from the electronic survey were selected to participate in Phase II. To ensure all quantitative and qualitative questions were aligned with the nine research questions, the researcher aligned each research question to the quantitative survey and qualitative interview questions (Appendix F). The data collection process involved detailed steps for Phase I as follows:

1. A 16-question, quantitative survey was distributed to over 4,000 participants of TCTC and WFWC in April 2017. The researcher assumed a conservative response rate of 12% of 4,000 with a 95% confidence level and a confidence interval or margin of error of 5%. Patten (2012) suggested if “\(N=4,000\), then \(n=351\)” (p. 203). Based on Patten’s guidelines, this study required 351 respondents for the online survey.

2. A census approach to distributing the online survey was also an option as this theoretically allows the entire population to respond and provides greater accuracy in the results (Patten, 2012). Burns and Bush (2014) contend, “The only perfectly accurate sample is a census” (p. 239).

3. The co-founder of TCTC, Dr. Saman Bakhtiar, posted the link to the survey on TCTC’s private Facebook page. The owner of WFWC, Tchicaya Missamou, posted the survey link on WFWC’s private Facebook page. Providing an online survey is more efficient than providing a hard copy or conducting phone interviews as it saves time and effort on the part of the respondent (Creswell, 2014). Each participant received the informed consent form (Appendix G) at the beginning of the electronic survey and agreed to participate prior to commencing the survey. During the first phase of the
study, respondents remained anonymous to ensure confidentiality. In addition, respondents received two weeks to complete the survey.

4. The online survey (Appendix H) was open from April 3, 2017 until April 17, 2017 to allow respondents ample time to respond and to secure the 351 participants required for this study. After 24 hours, over 100 respondents answered the survey and by April 17, 2017, 356 respondents answered the survey.

5. Answers were not included in the data from respondents who did not meet the conditional factor of being a member or challenger of a weight loss program with a private social media site.

**Phase II: Qualitative**

The data from the quantitative survey informed the second phase of the study, which sought volunteers to serve as interviewees and allowed the researcher to adjust the questions for the semi-structured interviews based on the data from the electronic survey. The telephone and face-to-face interviews included semi-structured questions to allow participants to expound on their experiences to glean richer stories and insight into the subject matter. The process for Phase II was as follows:

1. The researcher employed stratified sampling and selected 15 participants (11 females and 4 males to mirror the gender proportions represented in the online survey) from those who (1) volunteered from the electronic survey, (2) reached a BMI of 25 or below, and (3) were available by telephone in the U.S. or resided within two hours of Irvine, California. The researcher initially communicated with participants on April 18 via email to introduce herself,
explain the study, and set dates and times for the interviews. The email also included a digital audio consent form (Appendix I) to be completed prior to the interview.

2. The researcher met individually with 15 participants. Specifically, the researcher met with participants who lived in the U.S. and were available by telephone. The researcher also met face-to-face with participants at gyms within two hours of Irvine, California. The researcher greeted participants and started by thanking them for dedicating their time to the study. The researcher allotted two hours for each interview; however, the researcher was flexible with participants who were still answering questions and sharing their experiences beyond two hours.

3. Initially, securing 15 participants to be interviewed proved challenging as some participants encountered technological difficulties and did not know how to electronically download and return the consent form. Additionally, the researcher had to utilize Messenger, text messaging, and telephone calling to encourage participants to honor their commitment. The researcher interviewed the first participant on May 1, 2017 and interviewed the last participant on June 8, 2017.

4. Each interviewee was required to complete an informed consent form (Appendix J) prior to the interview and all interviews were recorded and transcribed by a third-party transcriptionist (see Appendix K for transcriptionist confidentiality form). Further, the researcher emailed each participant a copy of their interview transcript to ensure accuracy. The
The researcher asked all 15 participants to approve their transcripts. Additionally, the researcher inputted each transcript into NVivo®, a software program that assists with coding. The researcher then coded the data for themes.

5. The researcher used an iPhone application called Voice Recorder and Audio Editor as well as an MP3 recording device to capture the data. After every interview, the researcher titled each file using a consistent naming convention and then sent the file to the transcriptionist.

Data Analysis

The researcher analyzed the data separately as this study utilized a two-phase approach commencing with a quantitative survey, followed by qualitative interviews. The quantitative survey responses informed the qualitative interview questions, and the researcher analyzed the qualitative data via Excel, followed by NVivo® using the comparative method to identify, name, categorize, and describe data from the telephone and face-to-face interviews to disaggregate themes and codes. The comparative method includes “open-coding, axial coding, and selective coding,” and eliminates researcher bias from the responses (Creswell, 2014, p. 224). The conditional factors, independent variables, and dependent variables for the study were:

- Conditional Factor for Online Survey – Participant of weight loss and fitness program with a private social media site
- Conditional Factor for Interview – Participant of weight loss and fitness program with a private social media site who reached a BMI of 25 or below
- Independent Variables – Accountability, adherence, and social connectedness
- Dependent Variable – Private social media usage
Phase I Quantitative Research

The quantitative phase of this study applied a correlational analysis. A correlational analysis is the “strength and direction of the linear relationship between two variables” and ranges from -1 to 1 (Pallant, 2010, p. 128). This study used a Pearson product-moment correlation coefficient ($r$) as the Pearson $r$ assessed the relationship between two variables.

For this study, the Pearson $r$ assessed the continuous independent variables of accountability, adherence, and social connectedness. The analysis also assessed the dependent variable of private social media usage in relation to the independent and demographic variables of gender, relationship status, age, ethnicity, and income. The conditional factor focused on participation in a weight loss and fitness program that offered a private social media site. The quantitative phase of this study also employed an analysis of variance (ANOVA), which was developed by statistician and evolutionary biologist Ronald Fisher to determine if survey results were significant and to test groups to see if a difference exists between them (Salkind, 2004).

According to Creswell (2014), independent and dependent variables serve as the main variables in a study; however, moderating variables serve to “moderate the effect of independent variables in a study” (p. 245). This study intentionally employed demographic moderating variables to examine the “strength of the relationship between the independent and dependent variables by taking one variable and multiplying it by another” (Creswell, 2014, p. 53). Specifically, the moderating variables in this study served to provide a deeper understanding of the effect of gender, relationship status, age range, household income, and ethnicity on the independent variables of accountability,
adherence, and social connectedness by the dependent variable of private social media usage in weight loss and fitness programs.

**Phase II Qualitative Research**

Coding data was the process of organizing the data by *bracketing chunks* into categories and labeling the categories (Creswell, 2014). For this study, the researcher imported the interview transcripts to an Excel spreadsheet to synthesize the data and begin the coding process. Thereafter, the researcher implemented NVivo® as it is a qualitative software program designed to analyze data and is a valuable means for advancing the robustness of qualitative research (Bergin, 2011). The codes for this study were based on the emerging information collected from participants and were helpful in answering the research questions as they directly related to participant experiences of accountability, adherence, and social connectedness to a weight loss and fitness program.

**Presentation of Data**

This mixed-methods sequential explanatory study began by collecting and analyzing the quantitative data from the online survey. Next, the researcher analyzed the qualitative data to help explain the quantitative results obtained in the first phase. Qualitative research should tell a story and consist of narrative descriptions based on themes and patterns in the data (Roberts, 2010). The interview data communicated detailed stories and offered salient insights into participant experiences with accountability, adherence, and social connectedness to weight loss and fitness programs using private social media. Data were collected using two distinct phases beginning with a quantitative, online survey.
Limitations

Limitations are aspects of a study that may negatively impact the results or ability to generalize the findings (Roberts, 2010). Foreseeable limitations to this study included sample size and response rates as the population was 4,000 and according to Patten (2012), the sample size should be 351. An additional limitation to this study was only including participants from TCTC and WFWC. Moreover, researcher bias was a possible limitation as the researcher was a participant at TCTC. To avoid researcher bias, the researcher utilized a social media survey by Dr. Monica Shukla and altered the questions to align with the population of weight loss and fitness participants. The researcher also consulted with her dissertation chair to write the interview questions and utilized an external reviewer who coded 10% of the data and verified a minimum of 80% accuracy.

Summary

In sum, the objective of this mixed-methods sequential explanatory study was to examine the experiences of participants at TCTC and WFWC in relation to how private social media usage influenced accountability, adherence, and social connectedness to weight loss and fitness programs. A quantitative, online questionnaire was administered to 4,000 participants and a sample of 356 was obtained. The qualitative, face-to-face interviews proceeded the quantitative questionnaire, and the data from the quantitative questionnaire helped shape the face-to-face, semi-structured interview questions for 15 participants. Careful attention was given to possible researcher bias and the researcher declared her experience with TCTC, and an external reviewer was utilized to ensure reliability and validity.
CHAPTER IV: RESEARCH, DATA COLLECTION, AND FINDINGS

The preceding chapters presented the subject of private social media usage as it applied to weight loss and fitness program participant adherence, accountability, social connectedness, demographics, and potential benefits this study could have for weight loss and fitness program developers and trainers. This chapter deliberates the research, data collection, and findings of this study. Specifically, this chapter commences with a reiteration of the purpose statement and research questions, and discusses the research methods and data collection procedures for this study. Subsequently, this chapter explicates the alignment of the quantitative survey questions and qualitative interview questions to all nine research questions in addition to describing the population and sample specific to this study. This chapter concludes with a presentation and analysis of the quantitative and qualitative data arranged by research question, followed by a summary of the chapter.

Conditional Factors and Participant Demographics

The conditional factors for this study were being a member of a weight loss and fitness program and using the respective programs’ private social media site. Participants in the quantitative portion of this study comprised of 356 members of The Camp Transformation Center (TCTC) and Warrior Fitness and Wellness Center (WFWC). Specifically, 313 females and 43 males responded to the quantitative survey. The 15 qualitative participants comprised of 11 females and 4 males derived from 62 volunteers from the quantitative study who reached a BMI of 25 or below and responded to the invitation to participate in an interview.
Purpose Statement

The purpose of this mixed-methods sequential explanatory study was to examine the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability, adherence, and social connectedness. The study also sought to examine the relationship between demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ frequency of use of private social media and their level of accountability, adherence, and social connectedness. Lastly, the study sought to explore weight loss and fitness program participants’ perceptions of the impact of frequency of use of private social media on their level of accountability, adherence, and social connectedness.

Research Questions

The study was guided by nine research questions as follows:

1. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?
2. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?
3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?
4. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and frequency of use of private social media?
5. How do perceptions of private social media use and accountability vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

6. How do perceptions of private social media use and adherence vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

7. How do perceptions of private social media use and social connectedness vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

8. How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?

9. How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?

**Research Methods and Data Collection**

Employing a mixed-methods sequential explanatory approach required two components to the study. Phase I consisted of a survey and Phase II consisted of semi-structured interview questions based on feedback from the quantitative responses. According to Ivankova et al. (2006), a mixed-methods sequential explanatory design encompasses two consecutive phases wherein the researcher first collects and analyzes quantitative data, followed by collecting and analyzing qualitative data.
Phase I Data Collection

Phase I of this mixed-methods sequential explanatory research study utilized an online survey distributed by CEO of TCTC, Sam Bakhtiar, and CEO of WFWC, Tchicaya Missamou, to their respective members through their private Facebook pages. The online survey allowed the researcher to collect data germane to the influence of private social media usage on weight loss and fitness participants’ accountability, adherence, and social connectedness in a weight loss and fitness program. The survey was completed by 356 respondents, of which 88% (313) were female and 12% (43) were male. Figure 4 illustrates the data collection process for Phase I.

![Diagram](image)

**Figure 4.** Population to sample process for Phase I

Phase II Data Collection

Phase II of this mixed-methods sequential explanatory research study included semi-structured interviews. The researcher met one-on-one with participants at various
gym locations or by telephone. Further, 62 volunteers, 17.4% of all respondents from the online survey who reached a BMI of 25 or below, were contacted for interviews.

To align with the percentage of females and males represented in the quantitative data, the researcher utilized stratified sampling to select 11 females and 4 males for interviews. The researcher allotted two hours per interview to allow for authentic, in-depth discussions regarding participant experiences and how private social media use influenced their weight loss and fitness journeys, as well as ancillary information relevant to their journeys. Additionally, the researcher explained to the participants that all data and consent forms would be kept confidential and then deleted within 90 days of completing the study.

**Figure 5.** Population to sample process for Phase II

Convenience sampling of volunteers with a BMI of 25 or below was integral to selecting participants to ensure the volunteer pool was large enough to yield 15 interviews. Convenience sampling also offered straightforwardness for selecting
participants based on their availability (Creswell, 2014; Patton, 2015). Consequently, the qualitative data expounded upon the quantitative data for a more profound understanding as to whether private social media use influences accountability, adherence, and social connectedness in participants of weight loss and fitness programs.

**Population**

The population for this study was 4,000 members of the private Facebook pages of TCTC and WFWC. This population consisted of all members, challengers, and alumni from both organizations. Further, the population represented members, challengers, and alumni throughout the United States.

**Sample**

A total of 4,000 members, challengers, and alumni were invited by means of the private Facebook pages of TCTC and WFWC to complete the online survey. Of the 4,000 invited, 356 completed the online survey during the 10 days the survey was open.

Phase II of this study was characterized by the members, challengers, and alumni who completed the survey and reached a BMI of 25 or below as it was not feasible to gather information from the whole population. As a result, 62 volunteers from the online survey who reached a BMI of 25 or below constituted a representative sample of interest.

**Demographic Data**

Demographic data were collected from all 356 survey respondents, which represented 313 females and 43 males across 12 collective age groups. The five demographic sections included age, ethnicity, gender, household income, and marital status. Table 1 depicts the demographics for the 356 respondents.
Table 1

Phase I Demographic Data

<table>
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<tr>
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<tbody>
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<td>Single</td>
<td>52</td>
<td>14.6</td>
</tr>
</tbody>
</table>

Note.  n = 356
Presentation and Analysis of Data

The researcher analyzed data from the quantitative and qualitative phases of this mixed-methods sequential explanatory study. The data were presented for all nine research questions as follows: Research Questions One through Seven addressed the quantitative survey results and Research Questions Eight and Nine addressed the qualitative interviews. Moreover, the researcher summarized the data to present the overall key findings.

Social Media Usage

Prior to presenting the findings for the research questions, it was important to understand the frequency of participation in private social media and how participants engaged in private social media. As seen in Table 2, most participants (60.6%) engaged in private social media daily.

Table 2

Frequency of Participation in Social Media – Overall Sample

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than Once a Day</td>
<td>64</td>
<td>18.1</td>
</tr>
<tr>
<td>Daily</td>
<td>214</td>
<td>60.6</td>
</tr>
<tr>
<td>A Few Times Per Week</td>
<td>39</td>
<td>11.1</td>
</tr>
<tr>
<td>Weekly</td>
<td>26</td>
<td>7.4</td>
</tr>
<tr>
<td>A Few Times Per Month</td>
<td>9</td>
<td>2.6</td>
</tr>
<tr>
<td>Monthly</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Note. n = 353

In addition to frequency of use, participants were asked how they used private social media. Nearly all (90.2%) participants indicated they liked or reacted to posts from others. This was followed by commenting on posts from others, which was noted by 82.0% of participants. In contrast, only 30.6% of respondents shared posts of others (Table 3).
Table 3

Participation in Social Media – Overall Sample

<table>
<thead>
<tr>
<th>Activity</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only read posts from other members</td>
<td>143</td>
<td>40.2</td>
</tr>
<tr>
<td>Liked or reacted to posts from others</td>
<td>321</td>
<td>90.2</td>
</tr>
<tr>
<td>Commented on posts from others</td>
<td>292</td>
<td>82.0</td>
</tr>
<tr>
<td>Shared posts of others</td>
<td>109</td>
<td>30.6</td>
</tr>
<tr>
<td>Posted his/her own content</td>
<td>218</td>
<td>61.2</td>
</tr>
<tr>
<td>Replied to comments on his/her posts</td>
<td>213</td>
<td>59.8</td>
</tr>
<tr>
<td>Tagged other members</td>
<td>156</td>
<td>43.8</td>
</tr>
</tbody>
</table>

Note. n = 356

Phase I Quantitative Findings for Research Questions One through Three

Research Questions One through Three were:

- **RQ1.** What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?

- **RQ2.** What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?

- **RQ3.** What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?

Research Question One examined the relationship between participant use of private social media and accountability to their respective weight loss and fitness programs. Accountability equated to taking responsibility for actions and honoring commitments to self, family, program, trainer, and fellow gym members (Leggatt-Cook & Chamberlain, 2012). Research Question Two examined the relationship between participant use of private social media and adherence to their weight loss and fitness
program. Adherence referred to sticking with the weight loss and fitness program (Jacobs et al., 2016). Research Question Three examined the relationship between participant use of private social media and connectedness to others in their weight loss and fitness programs. Connectedness referred to an innate need for belonging and connecting to other humans in social settings (Deci & Ryan, 2000).

A Pearson correlation was used to analyze the data. Private social media usage was examined against all survey items related to accountability, adherence, and connectedness. Private social media usage significantly correlated with each item in that as use of private social media increased, so did the level of agreement that private social media affected accountability, adherence, and connectedness (Table 4).

Table 4

Social Media and Accountability, Adherence, and Connectedness

<table>
<thead>
<tr>
<th></th>
<th>Accountability</th>
<th>Adherence</th>
<th>Connectedness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Program</td>
<td>Food Choice</td>
<td>Program</td>
</tr>
<tr>
<td>Social Media Usage</td>
<td>.286**</td>
<td>.202**</td>
<td>.207**</td>
</tr>
<tr>
<td>Program</td>
<td>1</td>
<td>.703**</td>
<td>.687**</td>
</tr>
<tr>
<td>Accountability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Choice Accountability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>1</td>
<td>.481**</td>
<td>.435**</td>
</tr>
<tr>
<td>Adherence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>1</td>
<td>.499**</td>
<td>.265**</td>
</tr>
<tr>
<td>Connected to others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>losing weight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connected to others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>working out</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connected to others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for general support</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. ** denotes statistical significance at the .01 level.
Phase I Quantitative Findings for Research Question Four

Research Question Four was *What is the difference between demographic characteristics of weight loss and fitness program participants’ and frequency of use of private social media?* To address this research question, the researcher conducted an ANOVA. The results of the ANOVA showed no statistically significant differences in private social media use by gender, relationship status, age range, household income, or ethnicity (Table 5).

Table 5

*Use of Social Media by Demographic Characteristics*

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.88</td>
<td>.56</td>
<td>.45</td>
</tr>
<tr>
<td>Female</td>
<td>4.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>4.01</td>
<td>.49</td>
<td>.81</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>4.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic partnership/civil union</td>
<td>5.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and cohabiting</td>
<td>3.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 24</td>
<td>3.62</td>
<td>1.37</td>
<td>.24</td>
</tr>
<tr>
<td>25 to 34</td>
<td>3.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 44</td>
<td>4.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>3.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
<td>4.14</td>
<td>.58</td>
<td>.77</td>
</tr>
<tr>
<td>$20,000 – $34,999</td>
<td>4.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$35,000 – $49,999</td>
<td>4.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000 – $74,999</td>
<td>4.00</td>
<td></td>
<td></td>
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<tr>
<td>$75,000 – $99,999</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$100,000 – $149,999</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 – $199,999</td>
<td>3.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$200,000 or greater</td>
<td>4.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ethnicity
Asian  4.40  .72  .58
African America  4.62
Hispanic  3.92
Caucasian  4.14
Multiple ethnicities  4.09

Phase I Quantitative Findings for Research Question Five

Research Question Five was *How do perceptions of private social media use and accountability vary by demographic characteristics?* The researcher posed program accountability as a general question and posed food choice accountability as a specific question. To address this research question, the researcher conducted a separate ANOVA on both survey items. The results of the ANOVA regarding program accountability showed no statistically significant difference in participant agreement about how private social media usage affected program accountability (Table 6).

Table 6

*Program Accountability by Demographic Characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.49</td>
<td>.17</td>
<td>.69</td>
</tr>
<tr>
<td>Female</td>
<td>4.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>4.55</td>
<td>.67</td>
<td>.68</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>4.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic partnership/civil union</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and cohabiting</td>
<td>4.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 24</td>
<td>4.61</td>
<td>.87</td>
<td>.48</td>
</tr>
<tr>
<td>25 to 34</td>
<td>4.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 44</td>
<td>4.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>4.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Household Income

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>4.25</td>
<td>1.32</td>
<td>.24</td>
</tr>
<tr>
<td>$20,000 – $34,999</td>
<td>4.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$35,000 – $49,999</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000 – $74,999</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$75,000 – $99,999</td>
<td>4.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100,000 – $149,999</td>
<td>4.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 – $199,999</td>
<td>4.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$200,000 or greater</td>
<td>4.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>4.65</td>
<td>.44</td>
<td>.78</td>
</tr>
<tr>
<td>African America</td>
<td>4.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple ethnicities</td>
<td>4.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Similarly, no statistically significant differences were found between participant ratings of food choice accountability and demographic variables (Table 7).

Table 7

<table>
<thead>
<tr>
<th>Food Choice Accountability by Demographic Characteristics</th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.22</td>
<td>.03</td>
<td>.86</td>
</tr>
<tr>
<td>Female</td>
<td>4.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>4.23</td>
<td>.57</td>
<td>.75</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>3.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic partnership/civil union</td>
<td>4.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and cohabiting</td>
<td>4.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 24</td>
<td>4.06</td>
<td>.86</td>
<td>.49</td>
</tr>
<tr>
<td>25 to 34</td>
<td>4.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 44</td>
<td>4.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>4.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Household Income
- Less than $20,000: 4.23, .85, .55
  - $20,000 – $34,999: 4.43
  - $35,000 – $49,999: 4.20
  - $50,000 – $74,999: 4.38
  - $75,000 – $99,999: 4.28
  - $100,000 – $149,999: 4.29
  - $150,000 – $199,999: 3.83
  - $200,000 or greater: 4.17

Ethnicity
- Asian: 4.73, 1.08, .37
- African America: 4.22
- Hispanic: 4.36
- Caucasian: 4.17
- Multiple ethnicities: 4.40

Phase I Quantitative Findings for Research Question Six

Research Question Six was *How do perceptions of private social media use and adherence vary by demographic characteristics?* One survey item related to program adherence. To address this research question, an ANOVA was conducted. The results of the ANOVA showed no statistically significant difference in participant agreement about how private social media affected program adherence (Table 8).

Table 8

*Program Adherence by Demographic Characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.73</td>
<td>.49</td>
<td>.49</td>
</tr>
<tr>
<td>Female</td>
<td>4.66</td>
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</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>4.66</td>
<td>.83</td>
<td>.54</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>4.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic partnership/civil union</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and cohabiting</td>
<td>4.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4.66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Phase I Quantitative Findings for Research Question Seven

Research Question Seven was *How do perceptions of private social media use and social connectedness vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?* Three survey items related to connectedness. To address this research question, a separate ANOVA was conducted for each item. The results of the ANOVA showed no statistically significant difference in participants’ agreement about how connected they felt to others for weight loss based on demographic variables (Table 9).

<table>
<thead>
<tr>
<th>Age Range</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 24</td>
<td>4.89</td>
<td>.74</td>
<td>.57</td>
</tr>
<tr>
<td>25 to 34</td>
<td>4.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 44</td>
<td>4.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>4.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Household Income</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>4.80</td>
<td>.46</td>
<td>.87</td>
</tr>
<tr>
<td>$20,000 – $34,999</td>
<td>4.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$35,000 – $49,999</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000 – $74,999</td>
<td>4.60</td>
<td></td>
<td></td>
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<tr>
<td>$75,000 – $99,999</td>
<td>4.67</td>
<td></td>
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</tr>
<tr>
<td>$100,000 – $149,999</td>
<td>4.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 – $199,999</td>
<td>4.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$200,000 or greater</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>4.88</td>
<td>.98</td>
<td>.42</td>
</tr>
<tr>
<td>African America</td>
<td>4.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple ethnicities</td>
<td>4.68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Likewise, no statistically significant differences were found between participant ratings for connectedness to others for working out and demographic variables (Table 10).
Table 10

Connected to Others for Working out by Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.56</td>
<td>.23</td>
<td>.634</td>
</tr>
<tr>
<td>Female</td>
<td>4.48</td>
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<tr>
<td><strong>Relationship Status</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Married</td>
<td>4.44</td>
<td>.52</td>
<td>.796</td>
</tr>
<tr>
<td>Divorced</td>
<td>4.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>4.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic partnership/civil union</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single and cohabiting</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age Range</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 24</td>
<td>4.55</td>
<td>2.36</td>
<td>.054</td>
</tr>
<tr>
<td>25 to 34</td>
<td>4.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 44</td>
<td>4.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>4.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
<td>4.80</td>
<td>1.12</td>
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<td>$100,000 – $149,999</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 – $199,999</td>
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<td><strong>Ethnicity</strong></td>
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<td>Asian</td>
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<td>.727</td>
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<td>African America</td>
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<td>Multiple ethnicities</td>
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</tr>
</tbody>
</table>

Similarly, no statistically significant differences were found between participant ratings for connectedness to others for general support and demographic variables (Table 11).
Table 11

*Connected to Others for General Support by Demographic Characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.49</td>
<td>1.32</td>
<td>.25</td>
</tr>
<tr>
<td>Female</td>
<td>4.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relationship Status</strong></td>
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<tr>
<td>Married</td>
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<tr>
<td>Divorced</td>
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<tr>
<td>Separated</td>
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<td></td>
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<tr>
<td>Domestic partnership/civil union</td>
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</tr>
<tr>
<td>Single and cohabiting</td>
<td>4.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single but in a relationship</td>
<td>4.78</td>
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<td></td>
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<td>Single</td>
<td>4.41</td>
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<td></td>
</tr>
<tr>
<td><strong>Age Range</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>18 to 24</td>
<td>4.53</td>
<td>.59</td>
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<tr>
<td>25 to 34</td>
<td>4.61</td>
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<td></td>
</tr>
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<td>35 to 44</td>
<td>4.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 54</td>
<td>4.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 64</td>
<td>4.76</td>
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<tr>
<td><strong>Household Income</strong></td>
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<td></td>
</tr>
<tr>
<td>Less than $20,000</td>
<td>4.38</td>
<td>.78</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 – $199,999</td>
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<td>$200,000 or greater</td>
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<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>4.78</td>
<td>.55</td>
<td>.70</td>
</tr>
<tr>
<td>African America</td>
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<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.64</td>
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<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>4.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple ethnicities</td>
<td>4.50</td>
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<td></td>
</tr>
</tbody>
</table>

**Phase II Qualitative Findings for Research Question Eight**

Research Question Eight asked: *How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?* By means of semi-structured
interviews, the researcher queried 15 participants regarding how often they used private social media for their weight loss and fitness programs, and if private social media usage influenced their level of accountability, adherence, and connectedness. It is important to note the 15 interview participants reached a BMI of 25 or below, constituting a healthy weight.

To begin the interviews, the researcher asked the participants how often they used private social media. Similar to the survey data, interview participants reported using private social media daily and even more than once per day. For example, one participant specifically shared how he utilized the private social media site, noting:

I was really super active on the private page. It made me feel connected to other folks, and as I got more experienced, I found that a lot of people had questions just like I did in the beginning. I was now the veteran who had the ability to answer the questions. I felt good about answering the questions and getting somebody on track.

**Accountability.** The researcher asked the interview participants how private social media affected their level of accountability to their weight loss and fitness program. As can be seen in Table 12, three common themes emerged.

Table 12

<table>
<thead>
<tr>
<th>Common Theme</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Not to Fail</td>
<td>14</td>
</tr>
<tr>
<td>Pressure of Being Viewed as a Role Model</td>
<td>14</td>
</tr>
<tr>
<td>Safe Haven to Encourage Each Other</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note. n = 15*
**Motivation not to fail.** Weight loss and fitness program participants perceived the influence of using private social media on their level of accountability as motivation not to fail. An opinion shared among most participants was the high level of accountability associated with *checking in* and posting to social media after each workout. These public, forward-facing posts were viewed by their friends, family, and coworkers who followed their progress. One participant conveyed, “I felt more pressure to post after each work because I didn’t want to give my family and friends the satisfaction of thinking I had quit or failed another [weight loss] program.” Another participant said accountability related to her motivation not to fail, asserting, “What you eat in private shows up in public and I knew my trainers would question why I wasn’t losing the weight if I was cheating, so I stayed faithful to the plan.” An additional participant declared, “Knowing that my family and friends, and even co-workers and community network would be seeing my progress on my Facebook posts [held me accountable]. And, if I didn’t post a workout, they would notice and make comments.”

**Pressure of being viewed as a role model.** Weight loss and fitness program participants perceived the influence of using private social media on their level of accountability as pressure associated with being viewed as a role model during their physical transformation. Participants amassed attention for their success and did not want to let themselves or others down. One participant highlighted the pressure to keep losing weight and maintain the weight loss kept him accountable, stating, 

I had problems with accountability. Being seen as a role made me more accountable. I had to step up my game, which was a really good thing. I love that it forced me to not get lazy because someone else might be
looking up to me and I needed to deliver. It actually increased my accountability as I continued on my journey.

Another participant who lost a significant amount of weight also referred to being a role model, saying:

When I started the program, I was a 5XL shirt. I made a video starting with that shirt, and then taking off shirts all the way down to an XL. I posted that video and people started paying attention, praising me, looking up to me, and asking for advice. It made me work harder to not let them down, which turns out helped me.

**Safe haven to encourage each other.** Weight loss and fitness program participants perceived their level of accountability was attributable to the safe haven private media sites offered to encourage each other. This encouragement buoyed their desire to remove barriers to success and take ownership of their journey. Participants shared they felt safe to post on the private social media site as “It definitely gave me a sense of accountability and comfort knowing that I wasn’t on this journey alone and I wouldn’t be made fun of. I felt part of something important and it inspired me to encourage others.” Another participant asserted,

We all have had the struggles of being the heavier person, and struggling to stay accountable. We could all look to each other and not feel judged because we fell off the wagon, because we ate a thing of fries. Nobody is going to be upset at you. They’re still going to be there to pick you up. That’s something that I love. The safety of the site to express ourselves and help motivate each other to be accountable in a safe way.
Adherence. The researcher asked interview participants how private social media affected their level of adherence to their weight loss and fitness program. As can be seen in Table 13, three common themes materialized.

Table 13

<table>
<thead>
<tr>
<th>Common Theme</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put Self-First</td>
<td>14</td>
</tr>
<tr>
<td>Passive and Active Encouragement</td>
<td>12</td>
</tr>
<tr>
<td>Fear of Missing Out (FOMO)</td>
<td>11</td>
</tr>
</tbody>
</table>

Note. n = 15

Put self-first. Private social media affected participant adherence to the program because they learned to put themselves first and make themselves a priority to maximize their chance of being successful in their weight loss and fitness program. The most prevalent theme regarding adherence was the influence of private social media posts that advised and implored participants to make changes allowing them to put themselves first. Several participants asserted making their weight loss and fitness journey a priority and being selfish for the first time in their adult lives was key to adhering to their programs. Thus, this new outlook on prioritizing their needs became integral to success. One participant shared,

I’ve always taken care of everyone, even as a child. I’ve also been the one who fixed things and who others counted on to cook, clean, work fulltime, solve problems, and host holidays. I sacrificed my needs for others, so when I was ready to lose the weight and needed support, I was somehow viewed as self-centered. I saw examples of teamwork with couples losing weight together on the private media site. I saw women posting that they
were leaving their boyfriends and husbands because they were being sabotaged. When I stood my ground and demanded time to work out and to meal prep, my family felt betrayed.

The mindset of putting one’s self first aligned with Nathaniel Branden’s (1997) ethos of intelligent selfishness versus self-sacrifice. Creating, building, and implementing intelligent selfishness versus self-sacrifice predicates an innovative outlook on selfishness. Selfishness in this context meant awareness of one’s self and needs. Branden’s (2007) framework intended to explicate the essence and necessity of prioritizing, nurturing, and asserting one’s self, which engendered well-being for the individual and others.

*Changing the status quo.* This theme emerged as a subtheme of putting one’s self first as participants adjusted to their new normal and the status quo shifted by their decision to put themselves first. One participant relayed, “People were so used to me doing everything for them and putting my needs last, that when I decided to get serious about my weight loss and fitness, they felt neglected.” Another participant said, “Many weren’t supportive and even tried to sabotage me, but I hung in there. As I ate healthier, broke old habits, and made time for the gym, my routine changed, which meant those around me needed to adjust.”

*Relationships.* Several female participants discussed ending relationships with boyfriends and husbands once they lost a substantial amount of weight as they began to recognize how abusive their relationships were when they were obese, and how much they endured in their quest for love and acceptance. One participant realized,
The private social media site had a lot of postings that concerned unhealthy relationships and how others were finally putting their foot down, and I could no longer ignore that I was one of those who tolerated verbal and emotional abuse when I was obese because I did not think I deserved any better. When I started the camp, I felt supported and was praised for taking control of my health. I also saw what healthy relationships looked like and unfortunately, mine wasn’t one of them.

Another participant who lost over 100 pounds emotionally conveyed,

I will never let someone make me feel bad about doing this for myself ever again. In the beginning, it took a toll on my marriage, but we set boundaries so I don’t get carried away with working out too much, and I’m a better husband and father because of the weight loss and commitment to myself.

**Passive and active encouragement.** Participants discussed the challenges of sticking with their programs and how powerful being passively encouraged by others via reading private social media posts containing encouraging words, photos, and quotes was to their success. Participants also shared actively participating with others on the sites by creating posts, commenting on posts, replying to posts, sharing posts, and liking posts, positively impacted their success. One participant said,

If I’m having one of those down moments and then I see their encouraging comments, or their inspiration, or their motivation, or what they’re doing. It causes something in my mind and has great incentive that encourages me to get back on track.
Another participant was emotional regarding the significance of being encouraged by others and its impact on adherence. This participant tried several other programs and attributed the outpouring of encouragement to reaching a BMI below 25. Specifically, this participant exclaimed,

The posts on the site definitely encouraged me to keep going, especially when I went through some relationship and health problems. I thought that maybe I won’t make my goal. Maybe I can’t do this anymore. Then I get the encouragement from everybody on there, whether it was from someone else posting, or from me posting, or them posting my progress picture and people commenting on it. Whatever the case was, it was definitely encouragement to finish what I started and finally get healthy!

**Fear of missing out (FOMO).** Private social media posts affected participant adherence to the program by creating a fear of (1) missing out on time with friends at the gym, (2) watching others lose weight and get fit while they plateaued and even gained weight, and (3) seeing others praised for their success. Participants explicated seeing posts, discussions, and success photos during trying periods of their journey motivated them to get back on track and go to the gym as they feared being left out and not succeeding like their peers. One respondent described, “When I didn’t feel like going and I’d see other people on the site posting success pictures and success stories, it made me think, I don’t want to be left out, I got to go put the work in.” Another respondent declared, “Seeing others who started when I started who were initially close to my size now posting success photos in their cute, small outfits lit a fire under me to take the program seriously!”
**Connectedness.** The researcher asked interview participants how private social media affected their level of connectedness to others in the program. As can be seen in Table 14, three common themes emerged.

Table 14

<table>
<thead>
<tr>
<th>Common Theme</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Trust</td>
<td>13</td>
</tr>
<tr>
<td>Not Being Alone</td>
<td>13</td>
</tr>
<tr>
<td>Making Friends</td>
<td>12</td>
</tr>
</tbody>
</table>

*Note. n = 15*

Despite most connections being virtual, participants explained virtual social bonds and support were just as meaningful as those formed in-person. Ryan and Deci (2000) explained connectedness as an innate need to belong to a group and connect with others, and Vella et al. (2012) asserted social support was critical to one’s physical and emotional well-being, which aligned with the interview results. One participant highlighted, “I made connections from the private site and received support from veteran challengers all over the country to get guidance, encouragement, recipes, and tips.” An additional interviewee observed,

It’s like when you’re in the gym, you look mad similar to resting bitch face, but we call it resting gym face where you look mad because you’re concentrating on your workout and you’re not smiling. But inside you’re feeling like this is a great time and you’re actually happy, you just look unhappy. A lot of the time, that can hinder your connections with people because you’re busy, you’re in your own world, but then when you get home from the gym, and you’re back to your normal self, you’re able to
connect with people online and be like, oh my goodness, I had such a great workout. Or commenting that it was really good seeing you push yourself! You connect with people on social media because it’s hard to connect with someone when you’re at the gym, and you’re focused on your workout and giving it your all.

**Building trust.** Participants expressed private social media usage affected their level of connectedness by building trust. The largest number participants expressed the theme of building trust as salient to connecting with others. The idea of building trust was valued by one participant who explained,

> As trust builds, we share more and more about ourselves on the page, and then we start sharing some before and after photos and some different things. It all begins with the building of the trust with okay, nobody is going to recognize me. I can say what I want. I can ask questions and they’re not going to judge me. This helps us to connect and feel accepted by others who share similar journeys.

**Not being alone.** Weight loss and fitness program participants perceived the influence of using private social media on their level of connectedness as a sense of not being alone. This theme encompassed feedback such as being comforted by not feeling alone in their journey and sharing common goals in a quest to lose weight and get fit. Bronfenbrenner’s (1994) social ecological model supports this theme as effective human development occurs through regular interaction with others, and the absence of such interactions affects one’s desire to be physically active and emotional health (Deci & Ryan, 1985, 2000; Neal & Christens, 2014). This theme also included sentiments that private social media sites were digital safe havens to connect with others on similar journeys who specifically
understood the challenges associated with weight loss and fitness. An interviewee asserted, “It’s nice to know that somebody else is going through some of the challenges and obstacles that you may be experiencing during the six-week weight loss challenge. You can kind of have that bond.” Another interviewee communicated, “I think it’s because it’s private it’s a safe haven to post and connect with like-minded members without being seen as a narcissist.”

Making friends. Making friends via private social media affected participant connectedness to the program. This theme was noted by a multitude of participants who connected with others on private social media. A recurring feeling of acceptance and optimism from new friends on the private social media sites and at the weight loss and fitness gyms was conveyed throughout the interviews. For some, it was the first time they felt welcomed and part of a group after years of being rejected.

The theme of making friends was bolstered by the work of Wilkinson and Marmot (2003) who proclaimed, “Friendship, good social relations, and strong supportive networks improve one’s health at home, at work, and in the community” (p. 23). One participant acknowledged she regularly scheduled workout times with her gym buddies to connect socially and stay accountable. Another participant revealed, “I made gym buddies all over the country and we became a virtual family on a family journey. It was really cool to experience.” An additional participant shared,

I have friends from all over the U.S. on my Facebook now from the private page who I’ve never met in person, but who I’ve connected with and who check-in on me and vice-versa to keep encouraging each other to stay on our journey.
Phase II Qualitative Findings for Research Question Nine

Research Question Nine was *How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?* Two-thirds of interview participants utilized their private social media sites multiple times per day and one-third participated daily. Aligned with the quantitative findings, participants did not perceive their gender, relationship status, age range, household income, or ethnicity influenced their accountability, adherence, or social connectedness. Three female participants delineated gender as relevant to accountability and two male participants delineated gender as relevant to how they connected with others. All 15 interviewees indicated the five demographic characteristics did not influence program adherence. Two themes emerged from the interviews in terms of gender in relation to accountability and connectedness. Of the female participants, three indicated they would search through the private social media sites for female-specific issues, such as those related to personal hygiene, and two male participants reported they were hesitant to post on private social media for fear of being perceived as inappropriate by female members.

**Accountability and female-specific issues.** Weight loss and fitness program participants did not perceive gender, relationship status, age range, household income, or ethnicity influenced their level of accountability, except for female-specific issues. One participant elucidated in terms of accountability, “I would say that females are really, really into the private page and seem more willing to reach out and support others.” Another female participant expounded on that idea, echoing,
Being a female did affect how I used the site to stay on track only because women go through things a little bit differently than men do. Every month we get cranky. We don’t lose the weight as fast as the men. I do think that influences a little, but I know for me, personally, it makes me strive harder because I know women have those issues.

**Connectedness and not wanting to be deemed inappropriate.** Two male participants highlighted they were careful about connecting with females on the sites and reacting to and commenting on posts by females as they were concerned about appearing inappropriate. One male participant expressed,

> I’m not a fan of posting, and I’m even less of a fan of replying to posts and commenting on posts by females because I didn’t want to appear to be creepy. It seems the majority of this site was female, and there were a lot of female-related questions and stuff that came up. I don’t think the males participated as much, but they’re out there. I didn’t feel like I couldn’t connect, but I was definitely more mindful about too many likes and I chose my words carefully.

**Summary**

Chapter IV commenced with a restatement of the purpose, research questions, methodology, data collection process, population and sample, and data analysis process, followed by a thorough analysis of the data emanated from the Phase I online survey. Next, an analysis of data from the Phase II semi-structured interviews was presented. Of the 4,000 members, challengers, and alumni from both organizations, 356 responded to the online survey and 15 participated in face-to-face or telephone interviews.
A survey invitation was sent via the private Facebook pages of TCTC and WFWC. Of the 356 online respondents, 313 (87.9%) were female and 43 (12.1%) were male. From the 356 survey respondents, 62 survey respondents who reached a BMI of 25 or below volunteered to be interviewed. Emails were sent to the 62 volunteers and the first 11 females and 4 males who responded were selected to participate. The sample of 11 females and 4 males represented the gender population from the online survey.

The primary results from the correlational analysis of Phase I of this mixed-methods sequential explanatory study revealed private social media usage significantly correlated with all survey items. More specifically, as participant use of private social media increased, so did their level of accountability, adherence, and connectedness. The results from the ANOVA showed no statistically significant differences in private social media use by gender, relationship status, age range, household income, or ethnicity. Additional findings from the semi-structured interviews of Phase II produced results parallel to those from Phase I, except for the scant relevance of gender on accountability and connectedness. Chapter V presents the researcher’s conclusions drawn from the literature and data collected, as well as recommendations for action and further research.
CHAPTER V: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Studies indicated over 60% of adult Americans are overweight or obese (CDC, 2010a), approximately 400,000 people die in the United States each year due to complications from sedentariness (WHO, 2009), and according over 50% of adults in the U.S. are projected to be obese by the year 2030 (Fryar et al., 2012). People are undeniably dying of traditional health issues, but lack of social connectedness also had a considerable influence on health (Proceedings from the National Academy of Sciences, 2013). An emerging segment of behavioral research revealed incorporating private social media platforms into weight loss and fitness programs yielded potential benefits to participants in terms of easy access to social support, peer and trainer motivation, and health information (Dahl et al., 2016). With these identified national issues, described as a public health crisis of epidemic proportions (Cubic, 2004; Haslam, Satter, & Lean, 2006; Kolasa, 2015; Rasmussen, 2015), this study researched the relationship and perceived influence of private social media usage on accountability, adherence, and social connectedness by participants in weight loss and fitness programs.

Chapter V begins with a reiteration of the purpose statement and research questions, followed by the research design, population, sample, and methodology for this mixed-methods sequential explanatory study. This chapter then presents and synthesizes major findings, proceeded by a discussion of unexpected findings, and conclusions drawn from the study. This chapter also examines the implications for action and recommendations for further study. Lastly, this chapter concludes with closing remarks from the researcher.
Purpose Statement

The purpose of this mixed-methods sequential explanatory study was to examine the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability, adherence, and social connectedness. The study also sought to examine the relationship between demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ frequency of use of private social media and their level of accountability, adherence, and social connectedness. Lastly, the study sought to explore weight loss and fitness program participants’ perceptions of the impact of frequency of use of private social media on their level of accountability, adherence, and social connectedness.

Research Questions

1. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?

2. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?

3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?

4. What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and frequency of use of private social media?
5. How do perceptions of private social media use and accountability vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

6. How do perceptions of private social media use and adherence vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

7. How do perceptions of private social media use and social connectedness vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

8. How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?

9. How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?

**Research Design and Methodology**

This mixed-methods sequential explanatory study required two phases. Phase I was a quantitative phase consisting of an online survey made available to 4,000 members, challengers, and alumni of The Camp Transformation Center (TCTC) and Warrior Fitness and Wellness Center (WFWC). The online survey questions focused on answering Research Questions One through Seven as these connected to the quantitative phase of the study.
Phase II was qualitative and examined perception of how private social media usage influenced accountability, adherence, and social connectedness among weight loss and fitness program participants. This phase consisted of semi-structured interview questions based on the feedback from the quantitative responses and was designed to answer Research Questions Eight and Nine as these associated with the qualitative phase of the study. Further, Phase II employed convenience sampling due to the size of the population and need to elicit volunteers from the online survey who reached a BMI of 25 to partake in the semi-structured interviews.

**Population**

The population for this study consisted 4,000 people engaged in a weight loss and fitness program that incorporated social media. Approximately 3,000 participants from TCTC and 1,000 participants from WFWC were invited to participate in the quantitative phase of this study.

**Sample**

A sample represents all participants from whom data are collected. For Phase I, the entire population was invited to participate and 356 completed the online survey. For Phase II of this study, survey participants who reached a BMI of 25 or below could volunteer to participate in a follow-up interview. A total of 62 survey respondents volunteered to be interviewed and the first 15 (11 females and 4 males) to reply to the researcher’s request for an interview were selected. The reason for selecting 11 females and 4 males was to parallel the gender demographic represented in the online survey.
Major Findings

Research Questions One through Three

Research Questions One through Three were:

• RQ1. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?

• RQ2. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?

• RQ3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?

Findings, analysis, and discussion. Research Questions One through Three quantitatively examined the relationship between participant use of private social media and level of accountability and adherence to their respective weight loss and fitness programs as well as social connectedness to others in their respective weight loss and fitness programs. A Pearson correlation was conducted and findings signified a strong relationship between the frequency of private social media usage and participant accountability, adherence, and connectedness to weight loss and fitness programs. Analysis of the findings further showed as frequency of private social media usage increased, so did their perception private social media positively affected accountability, adherence, and connectedness.

This major finding aligned with current studies that linked positive health behavior to social media community participation (Balatsoukas et al., 2015; Hwang et al.,
2014; Laranjo, 2015; Ma et al., 2010; Taiminen, 2016). In particular, Ma et al. (2010) found social media participants exhibited healthy weight changes and participant adherence and success in their programs was associated with the number of friends they had in an online weight loss community. Correspondingly, Breckenridge (2006) established the interactivity of social networking for online weight loss programs increased accountability. Similarly, Hwang et al. (2014) revealed the regularity of private social media usage had the potential to affect weight loss and fitness program participant success as social media platforms facilitated social connectedness and increased program accountability and adherence.

**Research Question Four**

Research Question Four was *What is the difference between the demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants’ and frequency of use of private social media?*

**Findings, analysis, and discussion.** Research Question Four examined the difference between demographic characteristics (gender, relationship status, age range, household income, and ethnicity) of weight loss and fitness program participants and their frequency of use of private social media from a quantitative lens. An ANOVA was conducted and showed no statistically significant differences in the frequency of use of private social media by gender, relationship status, age range, household income, or ethnicity. This finding contrasted with a study of urban, low-income mothers of racial/ethnic minorities that found after 14 weeks of treatment, technology-based intervention participants lost significantly more weight (7.05 pounds) than non-
technology intervention participants and concluded online weight loss interventions were connected to easy access to information and positive social support (Cruice et al., 2014). Nevertheless, this finding confirmed past research concerning a weight loss study by Godino et al. (2016) that followed 404 college students aged 18 to 35 and found no significance between age, ethnicity, and gender in relation to frequency of use of social and mobile technologies.

Research Question Five

Research Question 5 was How do perceptions of private social media use and accountability vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?

Findings, analysis, and discussion. Research Question Five discussed the perceptions of private social media use and accountability by gender, relationship status, age range, household income, and ethnicity of weight loss and fitness program participants. Program accountability was posed as a general question and as a question specific to food choice accountability. The findings of the ANOVA showed no statistically significant difference in participant level of agreement regarding how private social media affected program accountability by gender, relationship status, age range, household income, or ethnicity.

For this study, accountability was defined as taking responsibility for one’s actions/decisions and honoring commitments (Leggatt-Cook & Chamberlain, 2012). The literature regarding the difference between demographic characteristics and level of accountability in weight loss and fitness participants was deficient. The majority of information was non-comparative and oriented toward the individual, which focused on
habits that increased accountability in weight loss interventions such as weighing one’s self daily (Metzgar et al., 2015), logging food intake via online and mobile applications (Godino et al., 2016), reducing stress (WHO, 2003), and developing strong social support networks (Asante, 2015).

**Research Question Six**

Research Question Six was *How do perceptions of private social media use and adherence vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?*

**Findings, analysis, and discussion.** Research Question Six was addressed by one item in the survey and demographic data. The variance of demographic characteristics in relation to perceptions of private social media use and adherence of weight loss and fitness program participants was studied. The findings from the ANOVA showed no statistically significant difference in participant perceptions of private social media use and adherence by the demographic characteristics of gender, relationship status, age range, household income, or ethnicity.

This finding may be because participants reported use of their personal Facebook pages to post mandatory post-workout check-ins, which participants found to be categorically linked to adherence. The results from a study by Napolitano et al. (2013) showed college students who used technology platforms such as Facebook and text messaging reported greater weight loss, which indicated the potential for an innovative weight loss intervention. Napolitano et al. (2013) found young adults agreed use of technology platforms was significant to their weight loss program. Although the survey for this study was completed by 356 respondents, the paucity of significant numbers of
respondents across demographic groups may account for the lack of significance between perceptions of private social media use and adherence by demographics.

**Research Question Seven**

Research Question Seven was *How do perceptions of private social media use and social connectedness vary by demographic characteristics (gender, relationship status, age range, household income, and ethnicity)?*

**Findings, analysis, and discussion.** Research Question Seven focused on the use of private social media and social connectedness by demographic characteristics of weight loss and fitness program participants. Three survey items related to connectedness. The findings of the ANOVA showed no statistically significant difference in participant agreement concerning how connected they felt to others for weight loss by demographic variables. This finding was supported by a weight loss study of over 1,138 participants wherein no gender differences were found in participant posting and browsing practices on social networking sites (Pupino, 2015). A study by Cruice et al. (2014) supported demographic variances related to program adherence and revealed low-income/racial minority participants who used technology during their weight loss program lost more weight than their counterparts who did not use technology-based interventions.

**Research Question Eight**

Research Question Eight was *How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?* Research Question Eight pondered
the influence of using private social media in weight loss and fitness programs to increase accountability, adherence, and connectedness.

**Accountability.** The interview findings for accountability supported the existing research and two significant themes emerged, motivation to not fail and pressure of being viewed as a role model.

**Motivation to not fail.** Of the 15 interviews, 14 participants (93%) asserted pressure of mandatory Facebook check-ins after each workout on their personal pages for all their family and friends to see was more effective for program accountability than utilization of their program’s private Facebook site. An interview participant expressed, “I didn’t want to fail and hear I told you so once again, which motivated me,” and another participant conveyed, “I’ve never been successful at losing weight, but I’ve also never used Facebook to publicize my intentions. Being required to post and tag after every workout inspired me to keep at it.”

**Pressure of being viewed as a role model.** Out of 15 participants, 14 participants (93%) perceived posting photos, words of encouragement and empathy, recipes, and advice on their program’s private Facebook site throughout their transformation drew substantial attention from others who praised them for their success, asked for tips, and wanted to be like them. The unprecedented attention engendered significant pressure to live up to being a role model to stay accountable. One participant was emphatic noting he “could not let others down” and “wanted to be the person others could turn to when they struggled.” Another participant shared, “Once I started getting noticed online for my weight loss success, I used social media to help others afraid of getting uncomfortable to achieve their goals.”
Adherence. Existing research regarding private social media use and adherence to weight loss and fitness programs established consensus for incorporating social media platforms in weight loss interventions as a low-cost, viable solution for increasing adherence (Roots, 2016; Sanford, 2010). A study by Jane et al. (2015) declared since the late 1980s, the health consequences related to overweight and obesity became global, urgent health priorities. Unfortunately, the methods employed to address the problem were not adequate. Jane et al. (2015) also indicated leveraging social media to foster adherence had merit given, “Facebook is a popular, easy to access and cost-effective online platform that can be used to assist the formation of social groups, and could be translated into health promotion practice relatively easily” (Jane et al., 2015, p. 1). Three major themes emerged from the data collected for Research Question Eight regarding adherence, put self-first, passive and active encouragement, and fear of missing out (FOMO).

Put self-first. The most significant finding regarding adherence was cited by 14 of 15 (93%) participants who perceived the influence of private social media posts recommending they put themselves first as vital to their success. A recurring sentiment by participants was the need to make their weight loss and fitness journey a priority and be selfish for the first time in their adult lives. One participant who lost more than 100 pounds heeded the advice of the self-first ethos from the private Facebook site and felt strongly it made a difference in losing weight despite loved ones feeling somewhat neglected. Branden (1997) corroborated the ethos of putting one’s self first through his study of intelligent selfishness versus self-sacrifice to elucidate the essence and necessity of prioritizing, nurturing, and asserting one’s self, which engenders well-
being for the individual and others. This finding was also supported by Wang and Willis (2016) who studied online community posts for Weight Watchers and found users who took control of their weight loss journey, celebrated small wins, and made themselves a priority were more successful.

Passive and active encouragement. Of the 15 participants, 12 (80%) perceived passive and active encouragement from others as significant to adhering to their program. Participants discussed the power of being passively encouraged by others via reading private social media posts with encouraging words, photos, and quotes. Participants also shared actively engaging with others on the sites by creating posts, commenting on posts, replying to posts, sharing posts, and liking posts positively affected their success. This finding aligned with the literature. A study by Quintanilla and de la Pena (2015) further supported the salience of social media posts of encouragement to promote weight loss and fitness program adherence.

Fear of missing out (FOMO). This finding was mentioned by 11 of 15 (73%) interviewees and was considered significant in relation to participant adherence to their program through fear of (1) missing out on time with friends at the gym, (2) watching others lose weight and get fit while they hey plateaued and even gained weight, and (3) seeing others get praised for their success. Participants shared how posts, discussions, and success photos during difficult times motivated them to adhere to their program as they feared being left out and not succeeding like their peers. The fear of missing out or being left behind was in accordance with literature pertaining to online social networking sites (SNS) and inclusion for success in weight loss interventions; however, the literature warned of potential negative effects on one’s psyche and decreased self-esteem. A recent
study warned of “potentially negative effects that SNS use can have… and the resultant behaviours and vulnerabilities that might ensue” (Buglass et al., 2017, p. 255).

**Connectedness.** Ryan and Deci (2000) defined connectedness as an innate need to belong to a group and connect with others. Vella et al. (2012) asserted social support was critical to one’s physical and emotional well-being, which aligned with the interview results. The researcher asked interview participants how private social media affected their level of connectedness. Although the connections made via the private Facebook sites were virtual, participants explained the bonds formed and support received were just as meaningful as those made in-person at the gym. The findings for connectedness were cited by the largest number of interviewees for program success (mean score of 83.5%).

Three major themes emerged from the data collected for Research Question Eight regarding connectedness, building trust, not being alone, and making friends.

**Building trust.** The theme of building trust was a major finding and expressed by 87% of participants as integral to connecting with others. One participant valued the idea of building trust and explained that, “As trust builds, we share…more about ourselves on the Facebook page, and then we start sharing some before and after photos and some different things…it all begins with the building of the trust.” The need to build trust in online social networks to promote connectedness kept with the literature. Branscum et al. (2014) confirmed this finding in their study that found trust was a modality for social support “and online weight loss communities can provide a high amount of social support to users, which in turn predicts the engagement in important weight control behaviors” (p. 29).
**Not being alone.** A sense of not being alone was a major finding perceived by 87% of participants who associated a sense of not being alone with a level of connectedness influenced by private social media usage. This theme encompassed feedback such as “I feel connected to those with similar posts or feelings or get inspiration from pure strangers,” and “I have found inspiration from others. I don’t feel like I’m alone on this journey to a healthier lifestyle. Not only do we support each another, we’ve become family.” The interview participants mentioned the phrase of not being alone on their journey 54 times. Two participants with a solitary outlook toward others did not feel they needed anyone to be successful and were “determined to lose weight and get fit no matter what.”

Bronfenbrenner’s social ecological model supported this finding as the absence of regular human interaction negatively affected one’s emotional health and desire to be physically active (Deci & Ryan, 1985, 2000; Neal & Christens, 2014). This theme also included feelings the private social media sites were virtual safe havens to connect with likeminded individuals who specifically understood the challenges associated with weight loss and fitness.

**Making friends.** Of the 15 interviewees, 12 (80%) found making friends via private social media affected their level of connectedness to others in their program. Throughout the interviews, participants conveyed a recurring feeling of acceptance and hope from making new friends on the private social media sites and at the weight loss and fitness gyms. After years of being marginalized, several participants expressed finally feeling like a valued member of a group.
This major finding was affirmed by Branscum et al. (2014) who concluded weight loss programs should leverage social support as “the benefits of Internet social support groups are many and include ease of use to communicate with others, especially about sensitive issues” (p. 29). Wilkinson and Marmot (2003) proclaimed, “Friendship, good social relations, and strong supportive networks improve one’s health at home, at work, and in the community” (p. 23).

Research Question Nine

Research Question Nine was *How do weight loss and fitness program participants perceive the influence of demographic characteristics (gender, relationship status, age range, household income, and ethnicity) on their level of accountability, adherence, and social connectedness?*

The data collected for Research Question Nine showed no major findings as participants did not perceive gender, relationship status, age range, household income, or ethnicity influenced their levels of accountability, adherence, and connectedness to their weight loss and fitness programs.

Unexpected Findings

A comprehensive review of the literature revealed overweight and obesity as global health concerns and interventions to promote positive weight behaviors were lacking. Based on the preponderance of female respondents to the online survey, the researcher expected the demographic characteristic of gender to be perceived as relevant to weight loss and fitness program accountability, adherence, and social connectedness. Neither the quantitative nor qualitative data supported this idea. Nonetheless, the
reinforcer identified some unexpected findings pertaining to social networks, private social media sites, and technology interventions for weight loss and fitness programs.

**Unexpected Finding One**

Private social media sites offered search tool features to access information across the site. This made locating answers, instructions, advice, and recipes much easier for users, especially concerning sensitive topics such as hygiene and female-related issues. For example, one participant expressed,

To adhere to the program, I searched the site for previous posts for recipes, answers to changes in my body, advice about jealousy from co-workers, friends, and family, and how to handle meal prep to stick with the food plan. This was great because then I didn’t have to be embarrassed or anxious about asking as thousands of people are on the site and have already asked the questions.

**Unexpected Finding Two**

The buddy system was not included in the research questions but was included in the quantitative survey and emerged from the qualitative interview as an unexpected and one of the most substantial findings. A preference for working out with gym buddies was denoted by 314 respondents (202 respondents strongly agreed and 102 agreed) as a significant intervention for program adherence. Similarly, 259 respondents ascribed setting times to meet with gym buddies to work out as relevant to accountability and a strong predictor for showing up, with 81% of 290 respondents sharing they set times to work out with their gym buddies daily or more than once a week.
Qualitative participants contended setting times to meet gym buddies kept them accountable and helped them stick with the workout classes. They found themselves looking forward to going when they had a buddy and it made classes more enjoyable. An interviewee stated, “I’ll honor a commitment to meet a gym friend for a class, but I’ll often drive right past my gym exit on my way home from work if I haven’t made plans to meet someone.”

**Unexpected Findings Three, Four, and Five**

A third, fourth, and fifth unexpected finding centered on the mandatory, weekly weigh-ins at the gym, a significant financial commitment, and posting mandatory workouts as motivators for accountability and adherence. The weight loss challengers from TCTC wagered $497.00 for a six-week challenge wherein they had to contractually lose 20 pounds, reach a predetermined BMI, and log 30 workouts in six weeks on their personal Facebook pages or risk losing their deposit. The interviewees stated the mandatory weekly weigh-ins, large financial deposit, and mandatory Facebook posts after each workout served as pressure to lose their contracted weight and reach their BMI goals. One participant shared, “Daily check-ins are my motivator, and Monday morning weigh-ins keep everything in check.”

**Unexpected Finding Six**

Participants noted negativity on the private Facebook site affected how frequently they used the site. Whether it was unkind replies or postings of foods not allowed on the plan, participants stated they did not have time for haters and “the Facebook group bothered me when people posted photos of foods we couldn’t have. It intensified my cravings, and it didn’t help. Also, any negativity - however this isn’t an easy process and
I know everyone has their moments.” Another participant asserted, “Sometimes I stay away from the private FB group as people can be unkind and negative.”

**Unexpected Finding Seven**

Weight loss and fitness program participants moderately perceived accountability was attributable to the safe haven private media sites offered to encourage each other. This encouragement buoyed their desire to remove barriers to success and take ownership of their journey. Despite only 40% of interviewees attributing accountability to a safe haven to encourage others, those who did felt strongly about its significance and shared, “It definitely gave me a sense of accountability and comfort knowing that I wasn’t alone on this journey and I wouldn’t be made fun of. I felt part of something important and it inspired me to encourage others.” Another participant asserted,

We all have had the struggles of being the heavier person and struggling to stay accountable. We could all look to each other and not feel judged because we fell off the wagon, because we ate a thing of fries. Nobody is going to be upset at you. They’re still going to be there to pick you up. That’s something that I love. The safety of the site to express ourselves and help motivate each other to be accountable in a safe way.

**Conclusions**

This mixed-methods sequential explanatory study sought to examine the relationship between weight loss and fitness program participant frequency of use, demographics, and perceived influence of private social media and level of accountability, adherence, and social connectedness. Despite the alarming overweight and obesity statistics found in the literature and the causal attribution to serious health
issues and even death, there remained a dearth of information for sustained, successful weight behavior interventions. Further, this study expected the demographic characteristics of gender, relationship status, age range, household income, and ethnicity to be perceived on some level as influencers for how frequently participants used private social media and the levels of accountability, adherence, and social connectedness; however, the quantitative and qualitative data did not support this expectation. Conversely, data analysis showed as participants’ frequency of private social media usage increased, so did their level of agreement that private social media positively affected accountability, adherence, and connectedness.

Based on the findings of this study and the literature, it was concluded connectedness through social media drove accountability and adherence (Figure 6). Deci and Ryan (1985, 2000, 2002) supported this conclusion with self-determination theory, which stated humans had a primary need to connect with others (social connectedness) to achieve their goals, followed by the autonomy to make their own decisions (accountability), and constancy (adherence).

![Figure 6. Model identifying how social connectedness drives accountability and adherence.](image)

Based on the findings of this study, demographic characteristics were not related to the frequency of use of private social media, nor the levels of accountability,
adherence, and social connectedness. However, this study examined a multitude of
demographic characteristics with some demographic ranges having few to no
respondents. For example, no males over the age of 65 were represented and only one
male 18-24 was represented. Based on prior studies, the researcher expected
differences based on gender and age; however, the study lacked sufficient statistical
power essential to detect differences due to the limited number of participants in certain
demographic categories.

Based on the findings from this study, private social media usage allowed
participants to break free from unhealthy relationships. After viewing posts from other
members and challengers who were losing weight, getting fit, and discussing how they
eliminated negative influences from their environment to be successful, participants
found the courage to make their needs a priority and stand up to their abusers,
saboteurs, and cynics. Bronfenbrenner’s (1979, 1994) social ecological theory
supported this conclusion, which discussed how the environment shapes humans.

Based on the findings from this study, interacting passively or actively on
private social media sites with others on the same journey helped participants feel
normal, many for the first time in their lives. Participants also shared surrounding
themselves with likeminded people allowed them to feel safe from judgment, which
encouraged them to share their struggles and successes.

**Implications for Action**

Currently, the success rate in treating obesity remains disturbingly low as it
requires a shift in deeply rooted patterns connected to environment, food, eating habits,
physical activity, and social fabric (Callahan, 2013). The economic consequences of
obesity are estimated at over $147 billion in U.S. medical costs and are projected to rise yearly (Hall et al., 2011). Nichols et al. (2012) asserted the prevalence of obesity is predicted to surpass smoking as the leading cause of preventable death in the United States. The following section specifies implications from this research and actions healthcare and fitness professionals should consider when developing weight loss and fitness programs.

1. Healthcare and fitness professionals should incorporate a private social media page into their weight loss and fitness programs to increase program accountability and adherence, and connectedness to others. Research conducted by Roots (2016) and Sanford (2010) recognized the relationship between posting on social media and accountability to others.

2. Healthcare and fitness professionals should encourage a buddy system wherein participants set actual dates to meet their gym buddies to boost weight loss and fitness program accountability, adherence, and social connectedness.

3. For participants without gym buddies who desire to be connected, healthcare and fitness professionals should facilitate connecting newcomers with veteran members. Deci and Ryan (2002) professed humans have a basic psychological need to feel connected and the need for social contact is evolutionary and integral to human survival.

4. Group workouts should be employed so no one works out alone and participants can motivate one another given social support is critical for one’s physical and emotional well-being.
Recommendations for Further Research

The gap in the research regarding the benefits of social networks in weight loss and fitness interventions is supported by Ferrar et al. (2014) who put forward the field of research for social online network interventions for weight loss and behavior change is in its infancy and merits further study. Recommendations for further research include:

1. Replicate this study with a larger sample size that includes different social media networks such as Instagram and Snapchat, and different types of weight loss and fitness programs.

2. Conduct this study by using just one or two demographic variables such as age and gender to determine if a relationship to weight loss and fitness program accountability, adherence, and social connectedness exists.

3. Conduct a case study of respondents who reached a BMI below 23 to explore the difference in accountability, adherence, and social connectedness of exemplar participants.

4. Conduct this study using independent variables other than accountability, adherence, and social connectedness.

5. Conduct this study with other populations such as college students to examine how social connectedness influences accountability and adherence in achieving educational goals.

6. Conduct this study using Nathaniel Branden’s *Intelligent Selfishness versus Self-sacrifice* as the theoretical framework.
Concluding Remarks and Reflections

People are dying at unprecedented rates from health-related conditions linked to sedentariness, which led to overweight and obesity. Baby Boomers and Gen Xers are not expected to live as long as their parents. Notwithstanding the profusion of literature and statistics regarding health issues and even death associated with overweight and obesity, the problem reached global, epidemic proportions and the preponderance of current interventions proved unremarkable.

Despite studies conducted in the fields of health, psychology, and business regarding social media usage and its inferences on end users, there existed a scarcity of research regarding the field of private social media usage by weight loss and fitness program participants to increase accountability, adherence, and social connectedness. The findings from this study demonstrated humans need to feel connected and the need for social contact is evolutionary and integral to human survival. The findings from this study also established participants must make their wellness a priority and be courageous enough to change the status quo to be successful in weight loss and fitness programs.

Accordingly, sharing one’s journey within the safe haven of a private social media site with likeminded people engendered camaraderie and acceptance, which made participants feel normal, many for the first time in their lives. Resultantly, social connectedness and accountability begat weight loss and fitness program adherence. Consequently, private social media usage was an effective and timely intervention for accountability, adherence, and social connectedness in weight loss and fitness programs and may be the answer to saving lives and ameliorating the dire global obesity epidemic.
REFERENCES


residential behavioural change, diet and fitness program for obese adults.

 Physiotherapy Research International, 21(2), 84-91. doi:10.1002/pri.1623


Fazeli, M. F. (2012). Social networks can help with dieting; some dementia care is unconventional Social networks can help with dieting; some dementia care is unconventional. The Washington Post.


doi:10.1111/jpcu.12415


Investor’s Business Daily. (2015, October 20) *General OneFile*. Retrieved from go.galegroup.com/ps/i.do?p=ITOF&sw=w&u=chap_main&v=2.1&id=GALE%7CA432025671&it=r&asid=62d8a5e3864578b1c2d01671c9100a9f


Kravitz, L. (2016). Dieting makes you fat! How? A look at the science, which found that contestants in The Biggest Loser regained most of the weight they lost. *IDEA Fitness Journal, 8*, 16.


*Health Psychology, 28*(6), 709-716.


Pata, G., Crea, N., Di Betta, E., Bruni, O., Vassallo, C., & Mittempergher, F. (2013). Original communication: Biliopancreatic diversion with transient gastroplasty and
doi:10.1016/j.surg.2012.06.039


doi.org/10.1038/sj.ejcn.1602194


Wang, Y., & Willis, E. (2016). Examining theory-based behavior-change constructs, social interaction, and sociability features of the Weight Watchers’ online
community. *Health Education & Behavior, 43*(6), 656-664.
doi:10.1177/1090198116629415

https://www.weightwatchers.com/us/

https://www.weightwatchers.com/about/his/history.aspx

Watchers International.

doi:10.1016/j.aorn.2015.05.019


Variation in perceived competence, glycemic control, and patient satisfaction:
Relationship to autonomy support from physicians, *Patient Education and
Counseling, 57*, 39-45.

motivating tobacco cassation: Supporting autonomy and competence in a clinical

Wojcik, J. (2009). Unhealthy employees cut productivity: Study; Costs of presenteeism
prove greater drain than worker absence. *Business Insurance, 17*. 


APPENDICES

APPENDIX A—DR. MONICA SHUKLA’S ELECTRONIC SURVEY

Doctoral Research - Social Media Survey

* Required

As a doctoral student at Chapman University and Social Media Administrator within higher education, I am seeking to understand how universities and colleges are utilizing eight specific social media platforms to better engage with their audience and brand one’s institution. Although there are a vast array of social media platforms currently in use today, this research will focus on only eight platforms and is seeking to survey participants who manage University-wide or College-wide social media outreach within accredited 4 year and graduate institutions.

Your participation in this nationwide study will greatly assist in understanding the landscape of higher education social media usage, and I am glad to share the results of the study with all participants. The survey will take approximately 8-10 minutes, and I greatly appreciate your support in this research effort.

If you are interested in volunteering to participate in a one-on-one interview, please include your contact information in the last section of the survey. Please respond to each statement and be assured that your responses will be kept confidential and anonymous. Risks of participating in this study are minimal and you have the right to choose not to participate, skip questions, or stop the survey at any time without consequences.

Thank you for taking the time to complete this brief survey!

By beginning the survey you are agreeing to participate in the study. Thank you for your participation! *

☐ I agree
1. How would you define your institution? *
   Check all that apply.
   - 2 Year College/University
   - 4 Year College/University
   - Online College/University
   - Public College/University
   - Private College/University
   - Graduate Program College/University
   - School within a larger University System (Ex: UC Schools)
   - Other

2. How many students are enrolled at your university? *
   You may approximate this number, if an exact value is unknown.

3. In which state or territory is your university located? *
   If located in multiple states, please indicate the primary location here and utilize the comment box below.
   ▼

   If your college/university is located in more than one state, please indicate the additional states in the comment box below.

4. What department do you work in? *

5. What is your job title? *
   - President
   - Chancellor
   - Vice President
   - Associate VP
   - Assistant VP
   - Sr. Director
   - Director
   - Assoc. Director
   - Asst. Director
   - Sr. Manager
   - Manager
   - Editor
   - Coordinator
   - Specialist
   - Dept. Assistant
   - Grad Assistant
   - Intern/Volunteer
   - Other
6. How would you best describe the scope of your use of social media for the college/university? •
   - University Wide (Ex: ABC University)
   - College Specific (Ex: School of Science at ABC University)
   - Departmental (Ex: Career Center at ABC University)
   - Other

7. What types of social media do you utilize in your role with the university? • Check all that apply and note this can be daily to annual usage.
   - Facebook
   - LinkedIn
   - Twitter
   - Foursquare
   - Pinterest
   - Instagram
   - YouTube
   - Google+
   - Not Applicable or No Social Media Usage
   - Other:

8. Who is your target audience? • Check all that apply.
   - Current students
   - Prospective Students
   - Donors
   - Faculty
   - Staff
   - Alumni
   - Parents
   - Other:

9. For what purpose do you use social media on behalf of your institution? • Check all that apply.
   - Provide event information
   - Deliver campus updates
   - Engage your audience (students/Prospective students/Alumni)
   - Brand your university
   - Market your university to others
   - It’s fun!
   - Other:
10. How often do you post a new message on Facebook? •
Select N/A if you do not use Facebook to communicate with the university’s audience

11. How often do you post a new message on Twitter? •
Select N/A if you do not use Twitter to communicate with the university’s audience

12. How often do you post a new message on LinkedIn? •
Select N/A if you do not use LinkedIn to communicate with the university’s audience

13. How often do you post a new message on Foursquare? •
Select N/A if you do not use Foursquare to communicate with the university’s audience

14. How often do you post a new message on Pinterest? •
Select N/A if you do not use Pinterest to communicate with the university’s audience

15. How often do you post a new message on Instagram? •
Select N/A if you do not use Instagram to communicate with the university’s audience

16. How often do you post a new message on YouTube? •
Select N/A if you do not use YouTube to communicate with the university’s audience

17. How often do you post a new message on Google+? •
Select N/A if you do not use Google+ to communicate with the university’s audience
Hi Diana,

Thanks for drafting the Permission Statement, and I have attached my signed copy above. I wish you all the best on your dissertation!

Regards,
Monica

Monica Shukla, Ph.D.
Associate Dean, Curriculum, Assurance of Learning and Tutorial Faculty Affairs
Assistant Professor, Business Administration
School of Business and Professional Studies

Brandman University
16355 Laguna Canyon Road
Irvine, CA 92618
mshukla@brandman.edu
Telephone and face-to-face interviews will be comprised of the following semi-structured questions. Prior to telephone and face-to-face meetings, I will review the online survey responses to save time in answering general questions about participants’ weight loss and fitness program experiences and the role that Facebook private social media played in their weight loss and fitness program journeys. For this study, the following terms have been defined.

**Accountability**- Ability to take responsibility for your actions/decisions and to honor commitments to yourself, your program, trainer, fellow gym members, and the like.

**Adherence**- The ability to stick with your program despite setbacks.

**Social Connectedness**- The feeling of being accepted by others, belonging to a group, and relating to others.

Q1. How often do you participate in your weight loss and fitness program’s private social media site(s)?

Q2. Did you find the private social media site(s) helpful? If so, how was it helpful?

Q3. How do you perceive the influence of using private social media on your level of accountability to your weight loss and fitness program?

Q4. How do you perceive the influence of using private social media on adherence to your weight loss and fitness program?

Q5. How do you perceive the influence of using private social media on your level of connectedness in your weight loss and fitness program?

Q6. How do you perceive the influence of your gender on using private social media and your level of accountability to your weight loss and fitness program?

Q7. How do you perceive the influence of your gender on using private social media and your level of adherence to your weight loss and fitness program?

Q8. How do you perceive the influence of your gender on using private social media and your level of connectedness to your weight loss and fitness program?

Q9. How do you perceive the influence of your marital status on using private social media and your level of accountability to your weight loss and fitness program?

Q11. How do you perceive the influence of your marital status on using private social media and your level of adherence to your weight loss and fitness program?
Q11. How do you perceive the influence of your marital status on using private social media and your level of connectedness to your weight loss and fitness program?

Q12. How do you perceive the influence of your age on using private social media and your level of accountability to your weight loss and fitness program?

Q13. How do you perceive the influence of your age on using private social media and your level of adherence to your weight loss and fitness program?

Q14. How do you perceive the influence of your age on using private social media and your level of connectedness to your weight loss and fitness program?

Q15. How do you perceive the influence of your ethnicity on using private social media and your level of accountability to your weight loss and fitness program?

Q16. How do you perceive the influence of your ethnicity on using private social media and your level of adherence to your weight loss and fitness program?

Q17. How do you perceive the influence of your ethnicity on using private social media and your level of connectedness to your weight loss and fitness program?

Q18. How do you perceive the influence of your income on using private social media and your level of accountability to your weight loss and fitness program?

Q19. How do you perceive the influence of your income on using private social media and your level of adherence to your weight loss and fitness program?

Q20. How do you perceive the influence of your income on using private social media and your level of connectedness to your weight loss and fitness program?

Q21. Do you have any recommendations for fellow and future program participants?

Q22. Is there anything else you would like to share regarding your weight loss and fitness journey?
March 6, 2017

Dear Brandman University Institutional Review Board,

I am the co-founder of The Camp Transformation Center and I agree to send out the link to Diana Cabori’s electronic survey for her doctoral study via The Camp Transformation Center’s private Facebook page.

Saman Bakhtiar

Dr. Saman Bakhtiar

Co-Founder, The Camp Transformation Center
Chino Hills, California

To whom it may concern:

I agree to send out Diana Cabori’s doctoral study survey link through The Warrior Wellness and Fitness Camp’s private Facebook page.

Tchicaya Missamou
Owner, The Warrior Fitness Camp
APPENDIX E—PRIVATE FACEBOOK PAGE MESSAGE

Facebook Message (Post)

Attention Campers! We have an opportunity to participate in an important doctoral study regarding how we use social media to support our weight loss and fitness journey. It will take approximately 8-10 minutes to complete. I encourage all of you to follow the link below to participate. At the end of the survey, please volunteer to be interviewed in person or by phone if you would like to discuss the topic in more detail.
### Research Questions

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Phase 1 Quant Questions</th>
<th>Phase 2 Qual Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of accountability?</td>
<td>11, 13, 13E, 14, 15</td>
<td>1, 3</td>
</tr>
<tr>
<td>RQ2. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of adherence?</td>
<td>10, 11, 13B</td>
<td>1, 4</td>
</tr>
<tr>
<td>RQ3. What is the relationship between weight loss and fitness program participants’ frequency of use of private social media and level of connectedness?</td>
<td>10, 11, 13A</td>
<td>1, 5</td>
</tr>
<tr>
<td>RQ4. What is the difference between the demographic characteristics of weight loss and fitness program participants’ and frequency of use of private social media?</td>
<td>3, 4, 5, 6, 7, 10</td>
<td>6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</td>
</tr>
<tr>
<td>RQ5. How do perceptions of private social media use and accountability vary by demographic characteristics?</td>
<td>3, 4, 5, 6, 7, 13A, 13B, 13C, 13D, 13F, 14, 15, 16</td>
<td>6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</td>
</tr>
<tr>
<td>RQ6. How do perceptions of private social media use and adherence vary by demographic characteristics?</td>
<td>3, 4, 5, 6, 7, 12B, 12E</td>
<td>7, 10, 13, 16, 19</td>
</tr>
<tr>
<td>RQ7. How do perceptions of private social media use and social connectedness vary by demographic characteristics?</td>
<td>3, 4, 5, 6, 7, 12A, 12D, 12F</td>
<td>8, 11, 14, 17, 20</td>
</tr>
<tr>
<td>RQ8. How do weight loss and fitness program participants perceive the influence of using private social media on their level of accountability, adherence, and social connectedness?</td>
<td>10, 11, 12A, 12B, 12C, 12D, 12E, 12F, 12G</td>
<td>6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</td>
</tr>
<tr>
<td>RQ9. How do weight loss and fitness program participants perceive the influence of demographic characteristics on their level of accountability, adherence, and social connectedness?</td>
<td>3, 4, 5, 6, 7, 12A, 12B, 12C, 12D, 12F, 13</td>
<td>6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</td>
</tr>
</tbody>
</table>
APPENDIX G— ELECTRONIC INFORMED CONSENT LETTER

BRANDMAN UNIVERSITY
16355 LAGUNA CANYON ROAD
IRVINE, CA 92618

RESPONSIBLE INVESTIGATORS:
Diana Cabori- dstrain@brandman.edu
Tamerin Capellino, Ed.D – capellin@brandman.edu

THE FOLLOWING WILL BE INCLUDED IN THE ELECTRONIC SURVEY: The purpose of this mixed-methods sequential explanatory study was to better understand how fitness members utilize social media for connectedness as well as accountability and adherence to weight loss programs. Although there are many social media platforms in use today, this research will focus on public Facebook pages as well as private, members-only, Facebook pages.

Your participation in this nationwide study will contribute to the body of knowledge regarding weight loss via private social media support. Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate in this electronic survey, you can withdraw at any time. Further, the survey will take approximately 10 minutes to complete. Please accept my gratitude in advance for your assistance with this research effort.

If you are interested in participating in a face-to-face interview, please indicate your interest and provide your contact information at the end of the survey. Your attention to each survey question is appreciated and you can rest assured knowing that your responses will be kept confidential and anonymous. Further, the information from this study will be used expressly for scholarly purposes. The risks of participating in this study are nominal and you have the right to choose to not participate, skip questions, and stop the survey at any time without consequences.

If you have any questions about completing this survey or any aspect of this research, please contact: Diana Cabori at dstrain@brandman.edu or Tamerin Capellino at capellin@brandman.edu.

ELECTRONIC CONSENT: By clicking on “agree,” you are moving forward from this webpage and acknowledge that you have read the informed consent, the information in this document, and that you voluntarily agree to participate. If you do not wish to participate in this electronic survey, you may click away from this webpage.

☐ AGREE: I acknowledge receiving this Informed Consent form. I have read the information and give my consent to participate in the study.
APPENDIX H—ELECTRONIC CONSENT AND QUANTITATIVE SURVEY

ELECTRONIC CONSENT: By clicking on “agree,” you are moving forward from this webpage and acknowledge that you have read the informed consent, the information in this document, and that you voluntarily agree to participate. If you do not wish to participate in this electronic survey, you may click away from this webpage.

☐ AGREE: I acknowledge receiving this Informed Consent form. I have read the information and give my consent to participate in the study.

DOCTORAL RESEARCH—SOCIAL MEDIA SURVEY
1. Have you participated in a weight loss and fitness program?*
   - Yes
   - No

2. Does your weight loss and fitness program offer a private social media site?*
   - Yes
   - No

3. What is your gender?*
   - Female
   - Male
   - Non-binary/third gender
   - Prefer to self describe:________
   - Prefer not to state

4. What is your marital status?*
   - Single
   - Married
   - Domestic Partner
   - Divorced
   - Widowed
   - Prefer not to state

5. What is your age?*
   - Under 18 years
   - 18 to 24 years
   - 25 to 34 years
   - 35 to 44 years
   - 45 to 54 years
   - 55 to 64 years
   - 65 to 74 years
   - 75 years and older
6. What is your ethnicity?*
   - White
   - Hispanic or Latino
   - Black or African American
   - Native American or American Indian
   - Asian / Pacific Islander
   - Other

7. What was your total household income during the last 12 months before taxes?*
   - Less than $25,000
   - $25,000 to $34,999
   - $35,000 to $49,999
   - $50,000 to $74,999
   - $75,000 to $99,999
   - $100,000 to $149,999
   - $150,000 to $199,999
   - $200,000 or more

8. How would you define your fitness program? Please select all that apply.*
   - Membership only gym
   - Private training at a gym
   - Group training at a gym
   - Other (please describe: ___________)

9. How would you describe your gym’s weight loss program?*
   - Strict eating plan provided by gym
   - Suggested eating plan provided by gym
   - No eating plan
   - Other (please describe: ___________)

10. How often do you participate in your weight loss and fitness program’s private social media site?*
    - Once per day
    - More than once per day
    - Once per week
    - More than once per week
    - A few times per month
    - Once a month

11. How do you participate in your weight loss and fitness program’s private social media site?* (please select all that apply) passive or active
    - Only read others’ posts
    - Comment on others’ posts
    - Post my own content
    - Reply to others’ comments on my posts
12. To what extent do you agree or disagree with the following statements?

I perceive that when I participate in my weight loss and fitness programs’ private social media site, I feel the following (please rate all that apply):*

A. The site helps me feel connected to others also trying to lose weight and get fit

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

B. The site helps motivate me to adhere to my weight loss and fitness program

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

C. The site helps keep me stay accountable to my weight loss and fitness program

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

D. The site helps connect me to others who desire to work out together

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

E. The site helps me avoid making poor food choices

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

F. The site helps me feel supported by others when I am feeling discouraged

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

G. The site encourages me to share my weight loss and fitness successes

Strongly Disagree Disagree Agree Strongly Agree N/A
O O O O O

Please add additional comments regarding how your weight loss and fitness programs’ private social media site(s) make you feel
13. To what extent do you agree or disagree with the following statement?  
I workout with a gym buddy/buddies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

14. To what extent do you agree or disagree with the following statement?  
I schedule times to meet with my gym buddy/buddies to workout.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

16. If you agreed with question #15, how often do you schedule times to workout with your gym buddy/buddies?*

<table>
<thead>
<tr>
<th>1-2 Times per Month</th>
<th>Once per Week</th>
<th>More Than Once per Week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**Additional Comments**

Please feel free to use the space below for additional comments regarding your use of private social media during your weight loss and fitness program, reasons you attribute to your weight loss and fitness success, suggestions, and the like.

If you are interested in receiving the results of this study, please include your email address, below.

**TELEPHONE & FACE-TO-FACE INTERVIEW PARTICIPANTS NEEDED!**

If you have reached a BMI of 25 or below and are interested in participating in a telephone or face-to-face interview regarding how you use social media to support your weight loss, please enter your name, phone number, and email address, below. The telephone and face-to-face interviews will be audio-recorded and will take approximately two-hours. Face-to-face participants must live within two-hours of Irvine, California (members of Lake Forest TCTC excluded).

By participating, you will be providing qualitative insights associated with enhancing the understanding of how private social media supports weight loss. A total of 20 participants
will be selected for the interview phase of the research. All data gathered from the telephone and face-to-face interviews will be kept confidential and deleted within 90 days after the study is complete. Additionally, sample questions can be provided to participants in advance, by request.

<table>
<thead>
<tr>
<th>NAME:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHONE NUMBER:</td>
</tr>
<tr>
<td>BEST TIME TO CONTACT YOU:</td>
</tr>
<tr>
<td>EMAIL ADDRESS:</td>
</tr>
<tr>
<td>CITY WHERE YOU LIVE:</td>
</tr>
</tbody>
</table>
APPENDIX I—DIGITAL AUDIO RECORDING CONSENT FORM

Title: A Mixed-Methods Study: Examining the Effect of Private Social Media Participation on Weight Loss and Fitness Program Accountability, Adherence, and Social Connectedness

Researcher: Diana Cabori

I understand that the research project in which I am agreeing to participate concerns my lived experiences as a participant of a weight loss and fitness program. The research is also interested in how participation in private social media influences accountability, adherence, and social connectedness in weight loss and fitness programs.

I understand that two hours have been allotted for my telephone interview. I further understand that this study is the basis for a dissertation that may be submitted for publication later. I also understand that the researcher will hold my responses in strict confidence and that no comments will be attributed to me by name in any reports on this study. I recognize that my participation is voluntary and that I can withdraw my participation in this study at any time or decline to answer any questions.

I hereby give my consent to allow digital audio recording of my interview. I understand that I can elect to receive a copy of my transcript once the digital audio recording has been transcribed so that I can review or clarify intent.

________________________________________  ________________
Print Name                                      Date

________________________________________  ________________
Signature of Participant                       Date

___Please check if you would like to receive a copy of your transcript.

If checked above, please provide an email address and your preferred telephone number.

________________________________________

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APPENDIX J—INTERVIEW INFORMED CONSENT

BRANDMAN UNIVERSITY
16355 LAGUNA CANYON ROAD
IRVINE, CA 92618

RESPONSIBLE INVESTIGATORS:

Diana Cabori- dstrain@brandman.edu
Tamerin Capellino, Ed.D – capellin@brandman.edu

THE FOLLOWING WILL BE INCLUDED IN THE FACE-TO-FACE INTERVIEW: The purpose of this mixed-methods sequential explanatory study was to better understand how fitness members utilize social media for connectedness as well as accountability and adherence to weight loss programs. Although there are many social media platforms in use today, this research will focus on public Facebook pages as well as private, members-only, Facebook pages.

Your participation in this nationwide study will contribute to the body of knowledge regarding weight loss via social media support. Your participation in the interview is voluntary. You may choose not to participate. If you decide to participate in the interview, you can withdraw at any time. Further, the interview will take approximately one hour to complete. Please accept my gratitude in advance for your assistance with this research effort.

Additionally, all face-to-face interviews will be recorded and later transcribed. Please rest assured knowing that your interview responses will be kept confidential and anonymous. Further, the information from this study will be used expressly for scholarly purposes. The risks of participating in this study are nominal and you have the right to choose to not participate, skip questions, and stop the interview at any time without consequences.

If you have any questions about participating in the face-to-face interview or any aspect of this research, please contact: Diana Cabori at dstrain@brandman.edu or Tamerin Capellino at capellin@brandman.edu.

ELECTRONIC CONSENT: By clicking on “agree,” you are moving forward from this webpage and acknowledge that you have read the informed consent, the information in this document, and that you voluntarily agree to participate. If you do not wish to participate in the face-to-face interview, you may click away from this webpage.

☐ AGREE: I acknowledge receiving this Informed Consent form. I have read the information and give my consent to participate in the study.
TRANSCRIPTIONIST CONFIDENTIALITY FORM

RESEARCH STUDY TITLE: A Mixed-Methods Study: Examining the Effect of Social Media Participation on Weight Loss and Group Fitness Program Accountability, Adherence, and Social Connectedness

I, ________, agree to serve as a transcriptionist for the above titled research study. I understand that my role during the study is only to transcribe the audio for each one-on-one interview. I understand the importance of maintaining confidentiality of the study participants; therefore, I will not share any information about the individuals participating in the above study that will connect them to any data gathered and transcribed during the one-on-one interviews or reported in the final dissertation.

Transcriptionist Signature

Date: 2/27/17

Signature of Principal Investigator – Diana A. Cabori, MAOL

Date: ____________________