

PERSONALITY AND EXERCISE: THE FIVE FACTOR MODEL OF PERSONALITY
AND CROSSFIT

An Abstract of

A Thesis

Presented to the

Department of Kinesiology

Western Illinois University

In Partial Fulfillment of

The Requirements for the Degree

Master of Science

By

Courtney E. Johnson

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ABSTRACT

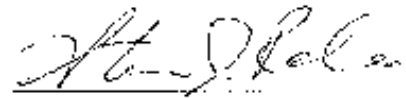
The present study aimed to determine if CrossFit draws a certain personality type that differs from that of other gym goers. In addition, the study aimed to further understand the personality traits of exercisers to potentially increase membership growth, to better advertise to a specific target market, build relationships, provide more social support and understanding, and achieve better adherence rates.

Subjects in this study were asked to complete an online survey consisting of two components: (1) a fitness demographic questionnaire and (2) the Five Factor Model of Personality Inventory (FFM; Costa & McCrae, 1992; John & McCrae, 1992). Five separate repeated measure ANOVA's were conducted for this study.

Results of the study were used to investigate potential personality differences between individuals who join and participate regularly in CrossFit gyms versus individuals who join and participate in Non-CrossFit gyms. The results showed no significant difference between openness, conscientiousness, agreeableness and neuroticism. The results however did show a significant correlation in extraversion between CrossFit and Non-CrossFit individuals ($p < .05$). The strength of the correlation was moderate. Individuals who join and participate regular in a CrossFit gym exhibit higher levels of extraversion as compared to individuals who join and participate regularly in Non-CrossFit gyms.

APPROVAL PAGE

This thesis by COURTNEY E. JOHNSON is accepted in its present form by the Department of Kinesiology of Western Illinois University as satisfying the thesis requirements for the degree Master of Science.



Chairperson, Examining Committee



Member, Examining Committee



Member, Examining Committee

May 29, 2019

Date

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Chapter I

Introduction

Currently there is widespread awareness of the importance of regular exercise. Regular physical exercise has been shown to enhance mood and self-worth, improve brain function and energy levels, and decrease pain. Additionally, regular exercise helps to reduce stress, reduce depression, and reduce anxiety (Riebe, Ehrman, Liguori, & Magal, 2017). Almost every community has a gym where people can work out and we understand more about how the human body works and responds to physical training than we ever have before (Trost, 2002; Warburton, 2006). Over 54 million Americans currently have a health club membership (Turk, 2014: 5).

Some of America's current top commercial gyms include: Anytime Fitness, Lifetime Fitness, Gold's Gym, Snap Fitness and the YMCA; each of which promote their programs in different ways. For example, Snap Fitness and Anytime Fitness market their facility as affordable and accessible. At around \$30 a month, Snap Fitness and Anytime Fitness provide affordable gym memberships with access 24 hours, 7 days a week to its members. Planet Fitness has memberships as low as \$10 a month for a "judgment free zone" and 24/7 gym access. Planet Fitness's contract-free and low cost gyms are changing the way gym members consume "full service" gyms such as Bally Fitness and Gold's Gym (Turk, 2014: 7-8).

Another big fitness competitor is the family oriented YMCA. With more than 10,000 gyms nationwide, its focus is community based. The YMCA offers affordable and well-organized programming for everyone ("About US", YMCA 2017). LifeTime Fitness & Gold's Gym franchises offer high-end facilities with amenities such as post workout

meals and provide individual and team sport-training programs. LifeTime is known to feature personal fitness instruction, salons, food courts, large child centers, and indoor/outdoor pools. Formed in 1965, Gold's Gym pioneered high end commercial health clubs and was notorious for being the place to learn all the latest fitness techniques and to produce bodybuilding champions (Gold's Gym Membership Experience, 2017).

Finally, another big contributor to modern day fitness is CrossFit. Unlike the big commercial gyms, CrossFit differs by being categorized as "extreme fitness" (Powers & Greenwell, 2016). CrossFit defines extreme fitness as "an exercise programs that participants push themselves beyond recommended exercise requirements, testing the limits of human strength, endurance, and tolerance. CrossFit has developed an intense, immersive culture that extends beyond the shared movements and workouts" (Heywood, 2015). CrossFit claims to be highly social because their gym members exercise together as a team, share public posts of their workouts on affiliate websites and social media, and members tend to know each other and may even socialize regularly outside of classes (Powers & Greenwell 2016).

To the corporate gym's dismay, over the past two decades, participation in CrossFit has grown exponentially from a few hundred members in 2000, to over 4 million devotees in 2014. CrossFit has 13,000 gyms in more than 120 countries. Whereas CrossFit's biggest rival, Planet Fitness, only has 1124 locations (Wang, 2016).

In its current height of today's fitness trends, the CrossFit brand itself has evolved from various trainings and trends of the past. According to CrossFit's founder, Greg Glassman, CrossFit took advantage of an erratic era of misinformation and simplified its gyms to reflect the early 1900s functional fitness without the use of a lot of fitness

machines. CrossFit used military work ethics and small group training of the 1960s to promote camaraderie and competition resulting in its growth to the billion dollar company that it is today.

Despite research that suggests American's today are more educated on personal fitness and have more access to personal fitness than ever before; about only 20% of adults meet the recommended guidelines of physical activity per week, with less than 5% of adults engaging in 30 minutes of physical exercise per day and only one-third of adults acquire the recommended amount of physical activity per week (Riebe, Ehrman, Liguori, & Magal, 2017).

Engaging in regular exercise has been shown to help control addiction and weight, strengthen bones, build muscle, and increase the chances of a longer life (Riebe et al., 2017). Regardless of physical activity benefits, individuals report several barriers to participation. These barriers include the lack of time, money, knowledge, skill, resources, support, and feelings of being unsafe (Troost, Owen, Bauman, Sallis, & Brown, 2002). Feelings of boredom and discomfort are one of the biggest barriers to engaging in physical activity and the use of music as an ergogenic aid may be used to combat these barriers (Reichert, Barros, Domingues, & Hallal, 2007).

In conclusion, each American has many reasons for why they engage in fitness. In 2006, Rhodes and Smith provided meta analytic summaries on major personality traits and physical activity. With an increase in general personality research over the past 20 years, there have been a growing number of studies focusing on personality and physical activity; however, none have been combined and systematically appraised (Eysenck, Nias, Cox 1982; Gavin 2004). Personality is hypothesized to affect social cognitions (i.e.,

perceptions, attitudes, norms and self-efficacy) toward a behavior, which in turn influence the health behavior itself (Ajzen, 1991, Costa & McCrae 1995; Rhodes 2006).

Rhodes and Smith combined 33 studies containing 35 independent samples, ranging from 1969 to 2006. Neuroticism (-), Extraversion (+) and Conscientiousness (+) were identified as reliable correlates of physical activity with small effect sizes, whereas openness and agreeableness were not associated with physical activity.

Another study by Courneya and Hellsten (1998) examined the relationship between personality and exercise behavior, motives, barriers and preferences using the five-factor model (FFM). Researchers looked at 264 undergraduate students who completed a battery of self-administered questionnaires including the NEO Five-Factor Inventory (Costa & McCrae, 1992) and the Godin Leisure Time Exercise Questionnaire (Godin & Shephard, 1985). The results of the study indicated that extraversion and conscientiousness were positively related whereas neuroticism was negatively related to exercise behavior. Neuroticism and conscientiousness were the personality dimensions most consistently related to exercise barriers. And all “Big Five” (Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism) personality dimensions were related to some aspect of preferences for exercise context and structure.

The study concluded that the FFM may be a useful framework for understanding not only how much exercise people perform, but also their exercise motives, barriers, and preferences. However, to date, no research has looked at fitness personality between different gyms and what that could indicate.

Statement of the Problem

The purpose of the study was twofold. The primary research question was: Are there significant personality differences between CrossFit members and members of Non-CrossFit gyms, specifically regarding The Five Factor Model of Personality? The secondary question was: Which factors, if any, are different between groups?

Purpose of the Study

The purpose of this study was to determine if CrossFit draws a certain personality type that differs from that of other gym goers. As exercise has been shown to lead to more emotionally stable personalities (Lox & Petruzzello, 2014), examination of the relationship between personality type and CrossFit participation will provide both CrossFit gyms and Non-CrossFit gyms with a better understanding of the personality traits of their exercisers. Having a better membership personality profile could potentially increase membership growth, build relationships, provide more social support and understanding, and achieve better adherence rates.

Research Hypotheses

The following research hypotheses were examined:

1. Individuals who join and participate regularly in a CrossFit gym will exhibit higher levels of extraversion as compared to individuals who join and participate regularly in Non-CrossFit gyms.
2. Individuals who join and participate regularly in a CrossFit Gym will exhibit lower levels of neuroticism as compared to individuals who join and participate regularly in Non-CrossFit gyms.

3. No differences in levels of openness will be seen between individuals who join and participate regularly in a CrossFit Gym and individuals who join and participate regularly in Non-CrossFit gyms.
4. No differences in levels of conscientiousness will be seen between individuals who join and participate regularly in a CrossFit Gym and individuals who join and participate regularly in Non-CrossFit gyms.
5. No differences in levels of agreeableness will be seen between individuals who join and participate regularly in a CrossFit Gym and individuals who join and participate regularly in Non-CrossFit gyms.

Limitations

A major limitation of this study was the limited outcomes. The structured questionnaire with close ended questions leads to limited outcomes outlined in the research proposal. Also, the respondents have limited options of responses, based on the selection made by the researcher. The empirical study of Big Five traits and fitness outcomes in humans is still in its infancy. The FFM also does not encompass every aspect of personality (e.g., Alvergne et al., 2010; Eaves, Martin, Heath, Hewitt, & Neale, 1990; Gurven, Rueden, Massenkoff, Kaplan & Vie, 2013; Nettle, 2005; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Delimitations

The study was conducted on current exercisers, specifically, CrossFit members and corporate gym members. Gym members and CrossFit members were only allowed to participate if they had continuously exercised for three or more months. Participants are

also volunteers who would have to be active on social media and check their email regularly.

Assumptions

As with any self-reported instrument, it is assumed that the responses given are accurate and the questionnaire will be completed to the best of the individual's ability. Additionally, it is assumed that the sample will accurately represent CrossFit membership population and Non-CrossFit gym members and that the results can be extrapolated on the population as a whole. Lastly, it was assumed that the instrument is reliable and valid for the population. Previous research indicates accuracy; however, this study uses the instrument on a specific population, which could alter the validity.

Definition of Terms

1. **Personality:** refers to individual differences in characteristic patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas: One is understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a whole (Kazdin, 2008). While there is a lack of agreement over its basic definition, this paper is based on the definition that traits are enduring and consistent individual level differences in tendencies to show consistent patterns of thoughts, feelings and actions. (McCrae et al., 2000).
2. **Personality traits:** mechanisms/causes of behavior (Cost and McCrae, 2009). Some scientists believe that personality is a reflection of a person's genes. They refer to personality traits as being genotypic. Others suggest that personality

merely describes behavior, called phenotypic. They do not describe how the behavior was caused.

3. **Exercise Identity:** the extent that exercise is descriptive of one's self-concept. Exercise identity has been identified as an important determinant of regular exercise behavior and exercise dependence symptoms (Lu, Wang, Chang, Huang, & Wang, 2012; Murray, McKenzie, Newman, & Brown, 2012).
4. **Exercise Adherence:** defined by the World Health Organization (WHO) is the extent to which a person is attending and meeting their goals in exercise. The unit of measure for adherence is performed exercise doses per defined period of time reported as a proportion of prescribed exercise doses undergone at the prescribed time interval (World Health Organization, 2010).
5. **CrossFit:** a group fitness program created in 1995 by Greg Glassman that is known for employing a scalable, varied approach to training. CrossFit uses functional movements and high intensity workouts that can lead to dramatic gains in fitness for all individuals regardless of experience. CrossFit encompasses a wide range of workout styles, including: high intensity interval training, Olympic weightlifting, plyometrics, powerlifting, gymnastics, endurance training, calisthenics, and strongman work (Glassman, 2001).

Chapter II

Review of Literature

What is CrossFit?

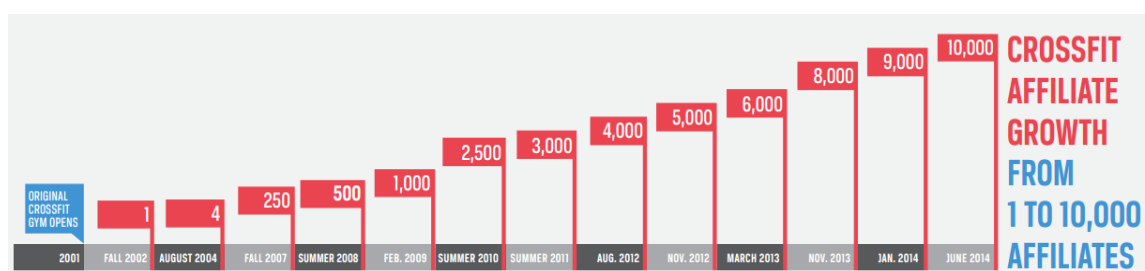
CrossFit is a premier fitness program created in 1995 by Greg Glassman. The program is known for employing a scalable, constantly varied approach to training, using functional movements and high intensity that can lead to dramatic gains in fitness for all individuals regardless of experience (Glassman, 2001). CrossFit encompasses a wide range of workout styles, including: (a) high intensity interval training, (b) Olympic weightlifting, (c) plyometrics, (d) powerlifting, (e) gymnastics, (f) endurance training, (g) calisthenics, and (h) strongman. Designed initially as an exercise program to promote functional fitness, CrossFit has undergone a rather rapid metamorphosis into a global, multi-dimensional, multi-million-dollar industry, branding itself as the ‘sport of fitness’ (“What is CrossFit,” 2016).

CrossFit gyms across the country are organized into small CrossFit Communities where trainers simultaneously work with anywhere from 2-18 members, called CrossFitter’s, to complete the workout of the day (WOD) together. Each WOD has standard performance goals and modifications for all members. Keeping track of progress and individual records serves as a tool to motivate the athlete’s output while deriving both relative and absolute metrics during every workout (“What’s the WOD?”, 2016).

Many attribute CrossFit’s growth in popularity to its physical results, camaraderie, competition, and fun of sport (Ross 2016). Prior to CrossFit, low-impact exercises like yoga, pilates, and elliptical training were the most popular forms of fitness (Keller 2005). CrossFit revolutionized modern functional fitness because it did away with

mirrors, excess fitness equipment, and state of the art spas that were popular throughout the country. As CrossFit continues to grow in popularity and shape the modern fitness industry, many have speculated whether CrossFit is just another fitness fad, or if it is here to stay. Additionally, there has been discussion about whether there is a specific personality type of people who join a fitness regime to work out with a group of people at constantly high intensities and try variable exercise routines to improve their overall strength and fitness? To help explain how CrossFit emerged in the popularity in the twenty first century, we will investigate the fitness trends of the past.

Officially established in 2000, CrossFit now boasts more than 7000 affiliates in the US alone: ‘While it took five years to grow to 500 affiliates, CrossFit Inc. added about 1,000 affiliate gyms every three months in 2013. And on June 20, 2014, CrossFit hit 10,000 affiliates worldwide’ (Beers, 2014). Glassman attributes the growth of his fitness program to the confluence of the launch of his website and the start of the wars in Iraq and Afghanistan. From his perspective, at that time “people [began to take] fitness much more seriously” (Glassman, 2002). Currently in 2016, CrossFit boasts 13000 affiliates worldwide.



(Retrieved from http://library.crossfit.com/free/pdf/CFJ_2014_06_10000_Beers3.pdf)

Fitness Trends of the Past

One might wonder how CrossFit has come about into modern day fitness. Although CrossFit claims to have brought functional fitness to the forefront of fitness today, it certainly wasn't the first to merge multiple types of fitness exercise together. To better understand the contextual reasons for personal fitness concern and the psychology of why people engage in the some of the fitness trends they do, we will first look at fitness trends throughout history to help explain how CrossFit came about and why it currently has millions of participants. In this glimpse of history, American's fitness changes over the years in times of war, depression, political push, socioeconomic status, fitness trends, education and even Hollywood influences.

1910-1910

Early physical educators brought gymnastics into schools. Young children were carefully educated on variety, progression, and precision with both on and off the ground training. This training incorporated both men and women (Sargent, 1906).

Pictured below are popular apparatuses during this era of fitness. These photos of various playgrounds in 1905 and 1910 look extremely similar to the CrossFit boxes of today. The images display simple iron frame apparatuses to serve as optimal forms of physical fitness both on and off the ground. CrossFit training programs are similarly rooted in gymnastics, plyometrics and calisthenics of this era



(left) 1910 Sherman Park in Chicago ChuckmanChicagoNostalgia.wordpress.com

Historians believe that the large influx of European immigrants during the nineteenth century resulted in increasing economic competition and a destabilized sense of masculinity in the U.S. Social commentators thought that men were becoming too feminine (Pettegrew, 2007). During this period men and women were both conscious of their health and fitness. Exercise bikes, weights and stretches were the dominant forms of exercise. Stretching was a serious exercise that would develop and improve the hips & ease constipation (Karolidis, 1993).

1920-1929

After winning WW1, society became more relaxed, enjoyed life more & exercised less. During the Roaring Twenties, comfort and fun were put ahead of exercise, and fitness was viewed as less important. A rise in consumer culture built through motion picture, Hollywood, tabloids, magazines, & radio prioritized life around eating and drinking (Dalleck, Lance, & Kravitz, 2002).

Maguire comments that Americans did not become disinterested in fitness after the war; they simply became more focused on personal appearance and social acceptance in more affluent times. Only in moments of crisis was the news and policy on fitness and national strength so heavily penetrated (Macguire, 2008).

However, at the end of the frivolous Roaring 20's, the stock market crashed in 1929, and fitness levels continued to decline. Funding for physical education programs became limited and was eventually exhausted as the economy continued to falter (Dalleck, Lance, & Kravitz, 2002).

1930-1939

In October of 1929, the stock market crashed, signaling the beginning of what would be a decade of economic depression. Therefore, a general lack of health became a growing trend during this time period. It became evident to many that there was a correlation between lack of physical fitness and economical decline (Rice, Hutchison & Lee, 1958).

In an era when Americans were suffering and even starving, the excessive nature and mood of the 1920s was not appropriate and was discouraged. As the culture changed in the 1930s, society shifted toward becoming more rational and regulated, and so did ideas about diet (Anderson 1985). Using diets and exercise routines, the ability to regulate and control the body through hard work and effort was stressed. This is the era that women began to think about their food choices and is considered the start of the diet craze (Garnsey, 2002).

Relatively new to the 1930s was a mail order workout program created by fitness pioneer Charles Atlas. Atlas' programs promised a radical change in physique and appearance, if they were followed dutifully. What was novel in this time period, and to the program's advantage, was that no equipment was necessary.

Even amidst trying times, recreation grew in importance, and physical educators, such as Jay B. Nash, took advantage of this new interest in recreation and introduced

recreational and leisure games into their programs. In 1937, the American Association for Health and Physical Education became a department of the National Education Association. Health became a more important aspect of the association as a full-time assistant in health education was appointed (Wrynn 2016).

1940-1949

When WWII ended in 1945, the public learned that the armed forces needed to reject nearly half of all draftees or give them noncombat positions (Rice, Hutchinson & Lee, 1958). Once again, these poor statistics helped focus the country's attention on the importance of fitness (Griffin, 1982:267). A significant historical piece was the 1943 publication of the first Women's Army Corps (WAC) Physical Training Manual because no physical manual had been made specific to women until this point in time.

Other significant developments included the initial application of research to fitness practice, particularly by Dr. Thomas K. Cureton at the University of Illinois. Dr. Cureton established the Physical Fitness Research Laboratory in 1944 where he subsequently introduced fitness testing for cardiorespiratory endurance, muscular strength and flexibility and identified exercise intensity guidelines for improving fitness levels. His research resulted in multiple recommendations for the improvement of cardiorespiratory fitness, including the identification of exercise intensity guidelines necessary for improved fitness levels. His suggestions became the fundamental basis behind future exercise programs (Berryman, 1996).

The 1940s was also heavily influenced by the popularity of boxing gyms in the working-class neighborhoods of the East Coast. Victor Tanny opened the first of several

gyms that were noteworthy for their multitude of activities such as bowling, ice-skating, movies, swimming pools and free weights (Knight, 2014).

1950-1959

Self-improvement became the hallmark of the middle-class identity in the 1950s. The 1950s men were the provider, labored responsibly, and were taught to be the aggressor. David Riesman (1950) described the 1950s as the change in American personality from inner directed to outer directed, in which self-worth was to be found through the eyes of others (Lash, 1979:127-8).

In 1952, the National Institutes of Health declared obesity the nation's number one nutritional problem. A year later, a research study by Dr. Hans Kraus revealed that 60% of American children were less fit than their European counterparts. Based on the results of testing, Dr. Kraus and Dr. Weber published the Kraus-Weber Physical Fitness Report in 1955, which ultimately led to the development of the President's Council on Physical Fitness and Sports and President Eisenhower enacting the President's Challenge Program (Kraus, 1954).

In the past, getting exercise was usually the by-product of playing a game or a sport, not something one engaged in the simply for the sake of self-development. In the 1950s, massages, sitting in a steam room, stretching, and one of the biggest toy fads documented by sociologists, the Hula Hoop (Barenholtz, 1980), along with vigorous calisthenics; were all viewed as equally beneficial fitness trends, demonstrating the breadth of the fitness concept at midcentury and the lack of a definition for fitness to date (McKenzie, 2013).

1960-1969

Soon after his election, JFK published an article in *Sports Illustrated* titled "The Soft American." In his article, President Kennedy spoke openly about the need for American citizens to improve their fitness levels and outlined reasons why the federal government should be concerned with the health of Americans. Kennedy prompted the federal government to become more involved in national fitness promotion and started youth pilot fitness programs (Trotter, 2012).

In the 1960s lifestyle items such as the absence of exercise, and prevalence of obesity, smoking, fat intake, drinking, greatly increased the risks of cardiovascular problems and possibly cancer. Air Force physician Dr. Kenneth H. Cooper, widely known as "the Father of the Modern Fitness Movement", is generally credited with encouraging more individuals to exercise at this time than any other individual in history. Dr. Cooper advocated a philosophy that shifted away from disease treatment to one of disease prevention. He said, "It is easier to maintain good health through proper exercise, diet, and emotional balance than it is to regain it once it is lost." (Dalleck, 2012).

During this time, Weight Watchers was also founded to provide motivation, mutual support and encouragement and instruction. Together, members of the Weight Watchers community came to realize that losing weight was more than just a diet. This revolutionary idea of changing habits and getting support and encouragement is why Weight Watchers is still a leader in the industry today (Weight Watchers International, 2016).

In 1969, Judi Sheppard Missett founded the dance-based fitness program Jazzercise consisting of 1-hour group fitness classes composed of cardio, strength, and

stretch moves with elements of hip-hop, jazz dance, kickboxing, and resistance training for a total-body workout. In fact, Jazzercise would become the first program to train and certify instructors, creating the first industry teaching standards and holding the first instructor conventions (Dalleck, 2012).

1970-1979

History has a way of repeating itself, and after the Vietnam War, the 1970's people were softer, gentler, and as Jeffords (1994) explains, the U.S. began to lose its sense of purpose. "We lost our geopolitical bearing.... instead of shaping history; the nation let itself be buffeted by events."

In 1974, the President's Council on Physical Fitness and Sport founded the American Association of Fitness Directors in Business and Industry (AAFDBI), which contributed to the increase in company-sponsored programs through its distribution of promotional materials and conduct of conferences related to physical fitness (Ardell, 1985; Barnes, 1983; Conrad, 1987). This organization and several corporations (e.g., North American Rockwell Corp., Goodyear Rubber Co., Xerox, Pepsico) were the pioneers of corporate fitness in the 1960s and 1970s (Conrad, 1987). Larger corporations provided their employees with stress management and dietary counseling and set up fully equipped gymnasiums with indoor tracks, saunas, and bicycles (Rader, 1991).

Critics such as Christopher Lasch and Tom Wolfe observed the 1970s culture was obsessed with self-discovery and self-improvement. A distinctive runner's culture emerged, one which revolved not only around running, but clubs, special diets, in group understandings and behaviors, running magazines and books, running celebrities, and a flourishing equipment industry (Lash, 1979:127-8).

Jackie Sorensen took the world by storm in the early 1970s by adding music to Coopers aerobics and creating aerobic dance — leading the way for today’s group fitness programs. Fitness guru Richard Simmons opened an exercise studio in California where eating reasonable portion sizes and performing proper exercise was emphasized. With his high-energy, motivational style, Simmons has helped countless people lose weight (Dalleck, 2012).

More importantly, in 1972, the government passed Title IX, a law passed to require gender equity for boys and girls in every educational program that receives federal funding (Kane & Sidwell, 1990:187). Exercise and fitness provided a non-political avenue of participation in the women’s movement to create empowerment. Taking care of one’s body was reclamation of power and a way to progress up the occupational ladder in the women’s movement (Maguire, 2008).

1980-1989

Physical vigor and muscle-bound bodies became extremely important as a means of self-presentation in the 1980s. Hollywood certainly made this new body popular culture with movies such as “Flash Dance”, “Rambo”, and “Perfect.” Women wore loose fitting runners’ t-shirts and form fitting leotards, and men donned short shorts and muscle revealing t-shirts. In the 1980s, body shape and physical expression was the utmost importance for status and power. The number of fitness clubs multiplied from 350 in 1968 to more than 7,000 in 1986. By 1986, Americans spent more money on exercise devices in home than they did on golf, camping, and racquet sports combined (Rader, 1991).

The 1980s marked the start of the fitness revolution for women where toned muscles started to become popular. Jane Fonda's workout exercise videos would eventually sell 17 million copies throughout the 1980s and 1990s allowing for Americans to pursue fitness in the comfort of their homes. Commercial gyms became common and many gym chains were founded (Dalleck, 2012).

In 1983, *Sports Illustrated* published a story calling the Great American Fitness Boom a myth. While it was true that some sectors of society, notably upper-middle-class baby boomers, were pursuing fitness with vigor, many other Americans weren't. Their diets were unbalanced and their lives sedentary. The nation's glitzy new health clubs were beyond the economic reach of many, and even some neighborhood YMCA's were going upscale (Neff, 1989).

1990-1999

In the 1990s, the Surgeon General's Report on Physical Activity and Health (1996), Healthy People 2000 (1990), and the CDC's Guidelines for School and Community Programs (1997) all focused on the deplorable physical condition of Americans. These reports cited physical inactivity as a national health risk, based on statistics such as: (a) 13 percent of young people are classified as overweight; (b) only half of all youths are physically active on a regular basis (and this percentage decreases with age); and (c) inactivity and poor diet cause at least 300,000 deaths per year.

Efforts to make physical exercise appear less daunting to the growing overweight and inactive population resulted in a somewhat erratic history of officially endorsed exercise prescriptions. For example, in the 1990s people were told that three 10-minute sessions of mild physical activity per day was sufficient (Critser, 2003).

Personal trainers begin as a new profession in the nineties and in fact it was reported that eight of the top ten selling videos in North America were workout videos (McGuire, 2008). Buns of Steel, 8-minute Abs, Pilates, Tae Bo, and Curves were popular group fitness exercises classes that could easily be adapted for a variety of populations (Dalleck, 2012).

Mary Swanson founded SilverSneakers in 1992 when she noticed that fitness opportunities for seniors were very limited. The program created a socially supportive atmosphere where older adults could participate in aerobic, resistance, balance and flexibility training designed specifically for their population (“About Healthways,” 2016).

It is late in this era that mass communication increases tenfold with the development of the World Wide Web and cell phone usage. Each of these technologies increased avenues to reach target markets. With more ways to access information, and with a burst of new certified professionals in the fitness field, more uncertainty about fitness is created (Dalleck, 2012).

2000-2009

Since the mid-1960s, America has witnessed a fitness boom for girls and women ranging from aerobics class and weight training at the local health clubs, to big time collegiate and professional athletics. Women now outnumber men as active sports and fitness participants, and they out-purchase men in athletic shoes and apparel. Exercise research has also matured and reached the public through pediatricians, sport medicine professionals, physical educators, athletic trainers, and physical therapy. Without

question, exercise research has contributed to American's interest in health lifestyle (Verbrugge, 2002).

Functional training appears on annual fitness-trend lists and shows no sign of waning in popularity targeting older adults, children, athletes, pregnant women and many more populations. During this time period, CrossFit incorporates and begins to grow its affiliates. CrossFit did away with mirrors, excess fitness equipment and state of the art spas, and glorified grit and hard work as a community to become a better and fitter individual. CrossFit arguably adopts its own guidelines and agenda via creating individualized, measurable programming. CrossFit marketed its programs online and with instructional videos before the huge popularity of fitness apps and trackers (Glassman, 2001).

At the turn on the century, options for staying fit exploded. From street dance, to kickboxing and more weightlifting exercises for women, a whole new world was at our fingertips. Workouts were more scientifically based and heart rate became an essential measure of how effective your workout was. Heart rate became essential because technology made it practical for everyday users instead of only medical personnel. Zumba Wii Gym memberships increased, as did women's awareness for strength training. Women wanted their figures to be lean, but were a little more muscle than prior.

Despite an interest in health lifestyle and explosion of fitness, physical inactivity was still increasing. In fact, daily participation in high school physical education classes dropped from 42% in 1991 to 33% in 2005. Even worse, as of 2006, 82.3% of high schools required physical activity and fitness classes, yet only 2.1% of high schools offered daily physical education (Kann, Telljohann, & Wooley, 2007).

In the United States physical inactivity and unhealthy eating contribute to obesity, cancer, and diabetes, which are responsible for at least 300,000 deaths each year. As physical inactivity has increased, so has overall cost of healthcare. Between 1993 and 2004, healthcare cost doubled, reaching \$1.9 trillion, or 16% of the nation's economic output, the largest share on record as of 2006 (Center for Medicare and Medicaid Services, 2006).

2010- Current

Currently there is widespread awareness of the importance of regular exercise. Almost every community has a gym where people can work out and we understand more about how the human body works and responds to physical training than we ever have before (Trost, 2002; Warburton, 2006). The fitness industry generated US\$26.5b in 2014, a 2.3% growth over five years (Turk, 2014). In 2014, over 54 million Americans had a health club membership (Turk, 2014: 5).

Some of America's current top commercial gyms include: (a) Planet Fitness, (b) Anytime Fitness, (c) Lifetime Fitness, (d) Gold's Gym, (e) Snap Fitness and (f) the YMCA, each of which promote their programs in different ways. For example, Snap Fitness and Anytime Fitness market their facility as affordable and accessible. At around \$30 a month, Snap Fitness and Anytime Fitness provide affordable gym memberships with access 24 hours, 7 days a week to its members. Planet Fitness has memberships as low as \$10 a month for a "judgment free zone" and 24/7 gym access. Planet Fitness's contract-free and low-cost gyms are siphoning members away from "full service" gyms such as Bally Fitness and Gold's Gym (Turk, 2014: 7–8).

Another big fitness competitor is the family-oriented YMCA. With more than 10,000 gyms nationwide, its focus is community based. The YMCA offers affordable and well-organized programming for everyone (YMCA, 2017). LifeTime Fitness & Gold's Gym franchises offer high-end facilities with amenities such as post work out meals and provide individual and team sport-training programs. LifeTime is known to feature (a) personal fitness instruction, (b) salons, (c) food courts, (d) large child centers, and (e) indoor/outdoor pools. Formed in 1965, Gold's Gym pioneered high end commercial health clubs and was notorious for being the place to learn all the latest fitness techniques and to produce bodybuilding champions (Gold's Gym Membership Experience, 2017).

In the current decade (2010-2019), participation in CrossFit has grown exponentially from a few hundred members in 2000, to over 4 million devotees in 2014. CrossFit has 13,000 gyms in more than 120 countries. Whereas CrossFit's biggest rival, Planet Fitness, only has 1124 locations (Wang, 2016).

CrossFit's program is intense. CrossFit has developed an immersive culture that extends beyond the shared movements and workouts (Heywood, 2015). CrossFit claims to be highly social and a "re-inventive" form of exercise that encourages those who participate in CrossFit to share their experiences with those around them (Dawson, 2015). Team exercises, the public posting of workout times, the photographing and sharing of pictures from the workout on affiliate websites and social media, and the neighborhood rooting of many boxes mean that unlike more impersonal gyms, members tend to know each other and may even socialize regularly outside of classes (Powers & Greenwell 2016).

Making Sense of Personality

According to the Encyclopedia of Psychology (2017), personality refers to individual differences in characteristic patterns of thinking, feeling and behaving. Some scientists believe personality is genetic, and influenced by a person's neurology or physiology. Other scientists believe that personality traits simply describe behavior. The Psychology of Exercise defines personality as the "underlying, relatively stable psychological structures and processes that organize human experience and shape a person's actions and reactions to the environment."

Hollander and Willis (1967) described the structure of personality as being composed of (a) personality core, (b) typical responses, and (c) role related behaviors. Where personality core is defined as a reflection of who we are. Personality core (a) is least likely to change. It is the perceptions of the external world, perceptions of self, basic attitudes, values, interests, motives, and our self-concept. A person's (b) typical responses are their predictable behaviors and ways of reacting to their environment. And (c) role-related behaviors are daily behaviors influenced by particular situations. These are most likely to change and be influenced by the environment we are in.

Although researchers disagree on the definition of personality, Paul et al's definition will be used throughout this review to alleviate additional genetic background information for the purpose of this study. Cost and McCrae define personality as traits are enduring and consistent individual-level differences in tendencies to show consistent patterns of thoughts feelings and actions (Cost & McCrae, 2000)

In the last 30 years, personality researchers have accumulated a considerable amount of evidence to support the importance of personality traits as mechanisms of

behavior. This research has provided evidence that personality is structured similarly across over 50 cultures, is extremely heritable, has high stability across time, and does not relate strongly to parental rearing style (Costa & McCrae, 2009; McCrae et al., 2000).

Allport (1937) and his colleagues created the fundamental lexical hypothesis, where they successfully identified 18,000 potential human traits from English dictionaries (Allport & Odbert 1936). To simplify the data, factor analysis was done to reduce common elements. Raymond Cattell (1947) identified 16 traits to summarize the larger collection done by Allport. These isolated 16 factors listed below in Table 1 became the dominant trait framework for the 1950s and 1960s but have not received much attention in the exercise domain.

Eysenck used the super trait approach to understand personality and developed his theory with three superordinate dimensions: (a) extraversion-introversion and (b) neuroticism-emotional stability and (c) psychoticism-superego (Eysenck & Eysenck, 1963). It is important to know that an individual trait represent a continuum; that an individual is not necessarily one or the other trait, they will fall somewhere in between. Relatively few people will have traits that reflect the ends of the spectrum. Eysenck theorized that personality traits had a biological system and genetic basis (Eysenck 1970).

16PF PRIMARY FACTORS		
Left Meaning	16PF Primary Factor	Right Meaning
Reserved, Impersonal, Distant	A - WARMTH	Warm, Outgoing, Attentive to Others
Concrete	B - REASONING	Abstract
Reactive, Emotionally Changeable	C - EMOTIONAL STABILITY	Emotionally Stable, Adaptive, Mature
Deferential, Cooperative, Avoids Conflict	E - DOMINANCE	Dominant, Forceful, Assertive
Serious, Restrained, Careful	F - LIVELINESS	Lively, Animated, Spontaneous
Expedient, Nonconforming	G - RULE-CONSCIOUSNESS	Rule-Conscious, Dutiful
Shy, Threat-Sensitive, Timid	H - SOCIAL BOLDNESS	Socially Bold, Venturesome, Thick-Skinned
Utilitarian, Objective, Unsentimental	I - SENSITIVITY	Sensitive, Aesthetic, Sentimental
Trusting, Unsuspecting, Accepting	L - VIGILANCE	Vigilant, Suspicious, Skeptical, Wary
Grounded, Practical, Solution-Oriented	M - ABSTRACTEDNESS	Abstracted, Imaginative, Idea-Oriented
Forthright, Genuine	N - PRIVATENESS	Private, Discreet, Non-Disclosing
Self-Assured, Unworried, Complacent	O - APPREHENSION	Apprehensive, Self-Doubting, Worried
Traditional, Attached to Familiar	Q1 - OPENNESS TO CHANGE	Open to Change, Experimenting
Group-Oriented, Affiliative	Q2 - SELF-RELIANCE	Self-Reliant, Solitary, Individualistic
Tolerates Disorder, Unexacting, Flexible	Q3 - PERFECTIONISM	Perfectionistic, Organized, Self-Disciplined
Relaxed, Placid, Patient	Q4 - TENSION	Tense, High Energy, Driven

Table 1. The 16PF Fifth Edition Administrators Manual.

Definitions of Personality

Research on personality and physical activity has spanned over 40 years. In 2006, Rhodes and Smith reviewed the relationship between personality and physical activity using Eysenck's (1970) three-factor model, the five-factor model, and Cattell's (1947) 16 personality factors. Their research found that neuroticism showed a small negative relationship with physical activity, while extraversion and conscientiousness had positive correlations. Agreeableness and openness to experience did not have a relationship with physical activity.

Despite his theoretical foundation, Eysenck also has relatively little examination in the exercise domain. In general, extraverted individuals are more likely to be involved in physical activity and adhere to exercise programs (Courneya & Hellsten, 1998). Shiomi (1980) also found extraverts have greater persistence while exercising. Extraverted individuals are more apt to seek out physical activity. This positive correlation makes sense as they tend to seek out social activities and active interactions (Eysenck et al., 1982). Neuroticism is inversely associated with a small effect, whereas extraverts are positively associated with physical activity with a small to moderate effect (Rhodes & Pfaelli, 2012; Rhodes & Smith, 2006).

Individuals with high neuroticism are less emotionally stable and are more likely to have anxiety or depression. Which may explain why neurotic individuals tend to avoid physical activity or cancel physical activity plans altogether. High neuroticism has also predicted motivation to watch high levels of TV (Weaver, 2003) and sedentary among men (Uijtdewilligen et al., 2011). Sedentary behaviors may represent a safe and easy behavior for neurotics who tend to be high in anxiety or depression. Individuals with high scores on conscientiousness are more self-disciplined and logically more likely to adhere in their physical activity behavior than someone with less conscientiousness (Digman, 1990; Costa & McCrae, 1995).

Another personality study done by Howard, Cunningham, and Rechnitzer (1987) found that high extraversion individuals were more likely to engage in swimming, aerobic conditioning, dancing, and tennis; Whereas less extraverted individuals were more inclined to engage in gardening and home improvement. No differences were identified for walking, jogging, golf, and cycling.

Rhodes and Pfaeffli's (2012) literature review also identifies six studies that have applied physical activity to the trait of extraversion with physical activity. In all cases, the results suggest that extraversion activity trait is a reliable and strong predictor of physical activity. Sociability has been assessed for its relationship with physical activity.

Personality and Exercise

As noted in the brief review of exercise in the last century, exercise is an important component of both physical and mental health. Noted psychologist and philosopher William James (1899) spoke of the importance of physical activity when he addressed the American Association for the Advancement of Physical Education, saying,

Everyone knows the effect of physical exercise on the mood: how much more cheerful and courageous one feels when the body has been tones up, than when it is "run down.... Those feelings are sometimes of worry, breathlessness, anxiety, and tension; sometimes of peace and repose. It is certain that physical exercise will tend to train the body toward the latter feelings. The latter feelings are certainly an essential ingredient in all perfect human character. (p 220-221)

Although our ancestors recognized the intimate link between body and mind, it wasn't until the 1960s and 1970s that any exercise psychology became relevant.

According to the Psychology of Exercise, there are two primary research objectives that relate to exercise and personality (Brown 2001):

1. Determination of the psychological *antecedents* of participation in physical activity.
2. Determination of the psychological *consequences* of participation in physical activity.

A personal factor that has received continued, albeit modest, attention in exercise and health psychology across the years is personality. Personality trait psychology has a long history (Digman, 1990, McCrae & Costa, 1995) with numerous definitions, but most

of the definitions encompass the concepts that personality traits are enduring and consistent individual-level differences in tendencies show consistent patterns of thoughts, feelings and actions (Costa & McCrae, 2000). Other researchers further theorize that personality has a biological or genetic basis (Costa & McCrae 2000; Eysenck 1970; Funder 2001).

Courneya, Bobick, and Schinke (1999) and subsequent authors (Conner & Abraham, 2001; Rhodes, Courneya, & Bobick 2001) conclude that exercise participation is associated with higher levels of extraversion, emotional stability, and conscientiousness. Conscientiousness is most strongly related to participation in exercise behavior, and its effect is mediated by intentions to the goal (health protection) and the specific behavior (exercising) (Courneya & Hellsten, 1998; Lochbaum & Lutz, 2005; Marks & Lutgendorf, 1999).

Previous researchers have also suggested that an individual's personality is related to exercise participation. It is suggested that high-level exercisers tend to show greater levels of extraversion than do low-level exercisers and non-athletes (Davis, Fox, Brewer, & Ratusny, 1995). Other evidence indicates that extraverts tend to be more sociable and active, and are typically characterized by exuberance and optimism (Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992). Thus, extraversion is associated with positive affect toward exercise (Diener, Sandvik, Pavot, & Fujita, 1992). As far as physical activity, personality is hypothesized to affect social cognitions toward a behavior which can influence the health behavior itself (Ajzen, 1991; Costa & McCrae, 1995; Rhodes, 2006).

Five Factor Model (FFM) Defined

The most commonly used personality model at present is the five-factor model (FFM; Costa & McCrae, 1992; McCrae & John, 1992). The FFM has one of the dominant frameworks of personality to this present day. The study delineates 5 key super traits of personality (1) Openness (ie, tendency to be perceptive, creative, reflective and appreciate fantasy, and aesthetics), (2) Conscientiousness (ie, tendency to be ordered, dutiful, self-disciplined and achievement oriented), (3) Extraversion (ie, tendency to be sociable, assertive, energetic, seek excitement and experience positive affect), (4) Agreeableness (ie, tendency to be kind, cooperative, altruistic, trustworthy and generous), (5) Neuroticism (ie, tendency to be emotionally unstable, anxious, self-conscious and vulnerable). Similar to work of Cattell and Eysenck, these common factor taxonomies are thought to represent the basic building blocks of personality and subsequently cause the expression of more specific sub traits (Costa & McCrae, 2009).

FFM & Personality

One such study that provided meta analytic summaries on major personality traits and physical activity was that of Rhodes and Smith in 2006. With an increase in general personality research over the past 20 years, there have been a growing number of studies focusing on personality and physical activity; however, none have been combined and systematically appraised (Eysenck, Nias and Cox 1982; Gavin 2004), Personality is hypothesized to affect social cognitions (ie, perceptions, attitudes, norms and self-efficacy) towards a behavior, which in turn influence the health behavior itself (Ajzen 1991; McCrae Costa 1995; Rhodes 2006).

Rhodes and Smith combined 33 studies containing 35 independent samples, ranging from 1969 to 2006. Neuroticism (-), Extraversion (+) and Conscientiousness (+) were identified as reliable correlates of physical activity with small effect sizes, whereas openness and agreeableness were not associated with physical activity.

Finally, a study by Courneya and Hellsten (1998) examined the relationship between personality and exercise behavior, motives, barriers and preferences using the five-factor model (FFM). Researchers looked at 264 undergraduate students who completed a battery of self-administered questionnaires including the NEO Five-Factor Inventory (Costa & McCrae, 1992) and the Godin Leisure Time Exercise Questionnaire (Godin & Shephard, 1985). The results of the study indicated that:

1. Extraversion and conscientiousness were positively related whereas neuroticism was negatively related to exercise behavior,
2. Each “Big Five” dimension correlated with theoretically expected exercise motives
3. Neuroticism and conscientiousness were the personality dimensions most consistently related to exercise barriers
4. All “Big Five” personality dimensions were related to some aspect of preferences for exercise context and structure.

The study concluded that the FFM may be a useful framework for understanding not only how much exercise people perform, but also their exercise motives, barriers, and preferences.

Definitions & Characteristics of Five Factor Model

Trait	Description
O penness	Being curious, original, intellectual, creative, and open to new ideas.
C onscientiousness	Being organized, systematic, punctual, achievement-oriented, and dependable.
E xtraversion	Being outgoing, talkative, sociable, and enjoying social situations.
A greeableness	Being affable, tolerant, sensitive, trusting, kind, and warm.
N euroticism	Being anxious, irritable, temperamental, and moody.

Table 2: The Big-Five Factor Structure.

Five Factor Model & Exercise/Sport

The Five Factor Model has not received a great deal of research in exercise, with a few exceptions as listed above where Courneya and Hellsten (1998) found extraversion, neuroticism and conscientiousness to be significantly related to exercise behavior and adherence. Extraversion and conscientiousness are positively related to moderate and strenuous exercise behavior and neuroticism is a significant predictor of exercise adherence, with greater levels of neuroticism predicting lower levels of adherence. A recent review found people who are more conscientious are more likely to act on their good intentions than their counterparts.

Courneya and colleagues have continued to research personality in explaining exercise behavior and have proposed that the key personality factor may be a sub-trait of extraversion referred to as an “activity trait”. This sub-trait is thought to reflect a person that tends to be busy and energetic and prefers fast paced living style (Rhodes, Courneya, & Jones, 2004). Additionally, in Rhodes and Pfaelli’s (2012) review, they found a moderate to large effect between activity trait and physical activity, noting that the sub trait “activity trait” is a strong predictor of physical activity.

Although several pathways for how personality interacts with health have been postulated, personality traits are hypothesized to influence physical activity through a health behavior model (Hogan, Johnson & Briggs, 1997). This suggests that the principal effect of personality on health-oriented behaviors is through the quality of our health practices. More specifically, personality is hypothesized to affect social cognitions (ie, perceptions, attitudes, norms and self-efficacy) towards a behavior, which in turn influence the health behavior itself (Ajzen 1991; McCrae and Costa 1995; Rhodes 2006).

One such study that provided Meta analytic summaries on major personality traits and physical activity was that of Rhodes and Smith. Rhodes and Smith aimed to review the available evidence for a relationship between personality and physical activity. With an increase in general personality research over the past 20 years, there have been a growing number of studies focusing on personality and physical activity; however, none have been combined and systematically appraised (Eysenck, Nias and Cox 1982; Gavin 2004).

Rhodes and Smith combined 33 studies containing 35 independent samples, ranging from 1969 to 2006. Extraversion, neuroticism, and conscientiousness were

identified as correlates of physical activity using random effects meta-analytic procedures correcting for sampling bias and attenuation of measurement error. The five factor model traits of openness to experience/intellect and agreeableness, as well as Eysenck's psychoticism trait, were not associated with physical activity. Potential moderators of personality and physical activity relationships such as sex, age, culture/country, design and instrumentation were inconclusive given the small number of studies.

Twenty-one samples were available to evaluate neuroticism (N) in meta-analysis. The results suggest that neuroticism is a correlate of physical activity with a small effect, but some moderators across studies may be present. One concern in this analysis was the heavy weighting of summary r from two very large samples. In cases such as this, Hunter and Schmidt (2004) advise that the meta-analysis be performed both with and without the large samples. Thus, without these two samples, the summary $r = -0.17$; the difference is not substantive (ie, below Cohen's q statistic for a small effect size (Cohen 1992), nor does it alter the classification of a small effect size, but it does suggest a slightly higher summary statistic. Instrumentation differences may also be a moderator of the results, but too few studies were available to assess this factor. Overall, it seems that N is negatively associated with physical activity but the effect is small.

Twenty-three samples were available to evaluate extraversion (E) in meta-analysis. The summary r was 0.23 (95% credibility interval 0.08–0.38), with an observed variance of 0.006 and a sampling error of 0. The results suggest that extraversion is a correlate of physical activity with a small–medium effect, but some moderators across studies may be present. Still, the population standard deviation of r was only 30% of the summary r ; thus the population variance of r is quite small in terms of absolute value.

Similar to the analysis of neuroticism, a meta-analysis was performed without two very large studies (De Moor, Beem, Stubbe, Boomsma, & Geus, 2006) because these are such heavy weights on the results. Just like neuroticism, without these two samples, the difference is not substantive and does not alter the classification of a small effect size, but it does suggest a slightly lower summary statistic. Instrumentation differences did not appear to vary the overall results considerably. Six of eight studies supported a positive relationship between physical activity and extraversion, and 10 of 11 samples using the NEO-FFI supported this relationship.

Twelve samples included the openness to experience/intellect (O) factor found in the five-factor model of personality (total $n=2651$). This factor is generally named openness to experience (Digman 1990) but some theorists who use adjective descriptors to assess personality refer to this factor as intellect (Goldberg 1990). Of these 12 studies in the exercise domain, only two found this trait to be a significant correlate of physical activity (Courneya et al 2002; Rhodes et al 2003). More telling, however, was the meta-analytical summary $r=0.08$, with an observed variance of 0.01 and a population sampling error of 0.01. Because the system error was negligible after accounting for population sampling error, the presence of moderators

Eleven samples were available to evaluate the relationship between agreeableness (A) and physical activity (total $n=2600$). The summary r was 0.01, with a small observed variance and sampling error that resulted in a population variance of 0. This was also similar to traditional vote counting; none of the 11 studies showed a significant ($p<0.05$) relationship between agreeableness and physical activity. Thus, no evidence for this relationship is present.

Of the 12 samples available to evaluate a relationship between conscientiousness (C) and physical activity, nine showed significant positive findings (total $n=2697$). The summary statistic was $r=0.20$, and the population variance was small after accounting for sampling error (0.005). Still, <50% of the observed variance (0.009) was accounted for by sampling error (0.004), and the 95% credibility interval was $r=0.06$ to 0.34, indicating some range in the population r . These findings support a small relationship between C and physical activity, but suggest that some study moderators may be present.

In summary, this review of the major domains of personality and physical activity yielded 33 studies and 35 independent samples from which to draw conclusions. Neuroticism (-), Extraversion (+) and Conscientiousness (+) were reliable correlates of physical activity with small effect sizes, whereas openness and agreeableness were not associated with physical activity. Personality moderators of physical activity mode seem possible, but research is limited. Research is also too limited to draw definitive conclusions about sex, age and culture interactions with personality and physical activity, but preliminary research suggests relative invariance. Future research using multivariate analyses, personality-channeled physical activity interventions, longitudinal designs, and objective physical activity measurement is recommended.

Finally, a recent study examined the relationship between personality and exercise behavior, motives, barriers and preferences using the five-factor model (FFM). Researchers looked at 264 undergraduate students who completed a battery of self-administered questionnaires including the NEO Five-Factor Inventory (Costa & McCrae, 1992) and the Godin Leisure Time Exercise Questionnaire (Godin & Shephard, 1985). The results of the study indicated that:

1. Extraversion and conscientiousness were positively related whereas neuroticism was negatively related to exercise behavior,
2. Each “Big Five” dimension correlated with theoretically expected exercise motives
3. Neuroticism and conscientiousness were the personality dimensions most consistently related to exercise barriers
4. All “Big Five” personality dimensions were related to some aspect of preferences for exercise context and structure.

The study concluded that the FFM may be a useful framework for understanding not only how much exercise people perform, but also their exercise motives, barriers, and preferences.

Exercise Motivation

There is extensive evidence that personality is associated with exercise motivation. Davis, Fox, Brewer, and Ratusny (1995) suggest that emotional stability and extraversion are positively related to weight control, sexual attractiveness, general appearance, health, mood improvement, and enjoyment. Avery (2003) states that emotional stability is primarily associated with negative affect. Davis et al. (1995) suggest that individuals high in neuroticism tend to be worriers who are preoccupied with things that might go wrong, and who respond emotionally to physical and psychological stressors (Duriez, Soenens, & Beyers, 2004). Courneya and Hellsten (1998) contend that all big five personality factors are positively associated with six exercise participation motivations (health, appearance, weight control, social, stress management, and enjoyment). They reported that extraversion and conscientiousness are positively related

to health, openness and agreeableness to stress management, and extraversion and openness to enjoyment. Maltby and Day (2001) propose a relationship between exercise motivations and psychological characteristics.

Exercise Adherence

Exercise adherence is defined by the World Health Organization (WHO) as the extent to which a person is attending and meeting their goals in exercise. The unit of measure for adherence is performed exercise doses per defined period of time reported as a proportion of prescribed exercise doses undergone at the prescribed time interval. One key element that contributes to adherence is motivation. Ryan and Deci's (2000) self-determination theory (SDT) proposes that a person's behavioral regulation towards an activity may be described as one of three categories: amotivated, extrinsically motivated or intrinsically motivated. A sub-theory of the self-determined approach is the Basic Needs Theory to which Ryan and Deci (2000) suggest that the origins of self-determined motivation stem from an individual's innate propensity to satisfy his or her need for autonomy, competence and relatedness.

These overall classifications of motivation differ because they represent different degrees of internalization of external values and goals. Although most exercise participation might be activated by both intrinsic and extrinsic motivation, research suggests that intrinsic motivation is more important for adherence (Frederick & Ryan, 1995; Wankel, 1993).

In terms of the relationship between exercise motivation and exercise participation, the Theory of Planned Behavior (TPB) developed by Icek Ajzen, suggests that exercise behavior can be predicted from individuals' intentions to perform the

behavior and their perceptions of control over the behavior (Doll & Ajzen, 1992; Rhodes et al., 2012). Thus, exercise participation behavior can be predicted by individual motivation to perform this behavior.

In recreational level exercisers, the effect of perceived competence on intrinsic motivation seems to be moderated by autonomy (Markland, 1999). It therefore appears that having a choice about taking part in recreational activity and respectively being more autonomous, it may in fact result in greater enjoyment of the recreational activity; where autonomy is the factor linked to intrinsic motivation, regardless of the level of perceived competence. However, as exercise tasks become more complex and require greater effort to master, recreational exercisers conjecturally require more motivation to persevere in order to become competent in performing the tasks (Losier, Perreault, Koestner, & Vallerand, 2001).

Also important in influencing motivation are the social-environmental factors within an exercise setting such as the levels of encouragement and perceived support from family, peers, teachers, coaches and significant others (Cox & Ullrich-French, 2010; Keegan, Harwood, Spray, & Lavalley, 2009). Rodgers, Hall, Duncan, Pearson, and Milne (2010) gathered data from four longitudinal studies lasting six months and found that regular exercisers had stronger intrinsic motivation compared with novice exercisers.

Exercise has many important health and well-being outcomes and adherence to some recreational physical activity is generally perceived as advisable. Thomson and McAdoo (2016), found that adherence has been linked to motivation, but the desire to be task-oriented and to exercise for personal enjoyment, personal satisfaction and personal interest without any obvious external rewards still requires further exploration in different

populations. While SDT is successful in predicting adherence, it does not seem to consider the factors that contribute to people starting to exercise in the first place, such as their personality factors.

Recent studies have focused on the effects of exercise and injuries (Aune et al., 2017; Chachula, Cameron, & Svoboda 2016; Friedman et al., 2015, Summitt et al., 2016, Welsh et al., 2016), the psychological benefits of exercise (Gill, Williams, & Reifsteck, 2016; Koteles et al., 2016), supplement use during training (Escobar et al., 2016, Kramer et al., 2016), physiological changes (Cronin et al., 2016), comparison of changes in fitness (de Sousa et al. 2016), perceived value (Pickett et al., 2016), and body image (Washington et al., 2016), but to date, there are no studies on exercise adherence and personality factors.

Chapter III

Methodology

This chapter includes the specific methods used to answer the research questions. The primary research question was: Are there significant personality differences between CrossFit members and members of Non-CrossFit gyms, specifically regarding The Five Factor Model of Personality? The secondary question was: Which factors, if any, are different between groups? The chapter includes information on: (a) Procedures, (b) Participants, (c) Instrumentation, and (d) Data analysis.

Procedures

After approved by the Western Illinois University Institutional Review Board (IRB), selected gyms were emailed asking for permission to post an advertisement, with a link to the study, on their Facebook and/or Instagram accounts. The recruitment ad described the purpose of the study and what participation entailed. If the exerciser was willing to participate, the individual followed a link to the online survey, which took 10-15 minutes to complete. The survey was administered in April 2017, and remained opened for 4 weeks. Because less than 200 individuals responded within that timeframe, the researcher contacted 20 additional gyms at a time for inclusion in the study. The survey closed in August of 2018 when the sample size was complete.

Participants

The participants in this study were recruited from a national sample of adult members of CrossFit gyms or Non-CrossFit corporate gyms. A convenience sampling method was used to recruit participants, in which select gyms were asked to share an online survey with their members through their Facebook and Instagram pages. A sample

of 1,252 gyms were emailed asking to participate in the study. Five hundred and fourteen were CrossFit gyms and 738 were Non-CrossFit gyms. A total of 812 exercisers completed the survey, with 208 respondents identifying CrossFit as their primary health club and 570 respondents identifying Non-CrossFit gyms as their primary health club. The age range was between 30 years and 44 years old. The selected gyms represented a variety of settings, including CrossFit facilities from across the nation and various corporate gyms (e.g., Gold's Gym, Planet Fitness, LifeTime Fitness, Anytime Fitness, YMCA, Crunch Fitness, SNAP fitness etc.). To participate in the study prospective recruits had to be paying member of one of the aforementioned gyms. For the purposes of this study an individual had to maintain an active membership for a minimum of three consecutive months to be considered a member.

Instrumentation

Subjects in this study were asked to complete an online survey consisting of two components: (1) a fitness demographic questionnaire and (2) the Five Factor Model of Personality Inventory (FFM; Costa & McCrae, 1992; McCrae & John, 1992). The survey platform was Survey Monkey.

The demographic portion of the survey contained items seeking information regarding the subjects, including: (a) age, (b) gender, (c) height, (d) weight, (e) perceived fitness level, (f) health status, (g) exercise history (types, frequency), (h) gym memberships (cite, years, frequency), (i) rating of enjoyment and adherence, (j) reason for joining/leaving, and (k) types of workouts (individual or group). A copy of the demographic portion of the survey can be found in the Appendix A.

The second portion of the survey contained the *Five Factor Model of Personality Inventory* (FFMI) refined by Goldberg (1990). The FFMI is a 50-item self-report questionnaire designed to assess the exercisers personality. The items included in the FFMI are delineated into 5 separate traits of personality (1) Openness (10 items), (2) Conscientiousness (10 items), (3) Extraversion (10 items), (4) Agreeableness (10 items), and (5) Neuroticism (10 items). Each item was rated on a five-point Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (5). The sum of the 10 items within each scale provides the score for each of the five traits of personality. Scores can range from 10 to 50. The measurement scale items have been empirically tested to support construct validity, internal consistency, and test-retest reliability (Costa & McCrae, 1992; Courneya & Helisten, 1998; Ingledew & Markland, 2008). A copy of the FFMI can be found in Appendix B.

Data Analysis

Data analysis was conducted using the Statistical Package for the Social Science (SPSS) Version 23. Descriptive statistics (e.g. mean, SD, N) were computed for each of the demographic variables collected. Separate Analysis of Variance (ANOVA) tests were used to evaluate significant differences for each of the five FFMI traits between CrossFit members and Non-CrossFit members. The alpha level was set at 0.05 for all hypothesis testing procedures.

Chapter IV

Results

Introduction

Included in this chapter is the statistical analysis of the data. The purpose of this study was to determine if CrossFit draws a certain personality type that differs from that of other gym-goers, measured by the Five Factor Model (FFM). The topics included in this chapter are: (a) Population demographics, (b) hypothesis testing, and (c) a summary of the findings.

Demographics

Five hundred and fourteen CrossFit gyms and seven hundred and thirty eight non CrossFit gyms were emailed and asked to participate in this study. Of 1252 gyms that were emailed, 812 exercisers filled out the survey. There were 208 respondents that identified CrossFit as their primary health club and 570 respondents identified other gyms as their primary health club. Table 3 below demonstrates some large disparities among gender and exercise frequency between the two groups. Participants of the survey were well educated and middle to upper middle class in household income.

CrossFit Demographics

Eighty-three percent of the CrossFit respondents have been a CrossFit member for 1 or more years, where 42% of the respondents had been a member of CrossFit for more than 5 years. 56% of CrossFit exercisers answered that they worked out 2 to 4 days a week and 39% reported that they exercised 5 to 7 days a week. Of the 208 respondents,

only 182 exercisers completed the entire survey and 67% of the CrossFit respondents identify as female.

Non-CrossFit Demographics

Seventy six percent of Non-CrossFit respondents have been a member of a gym for 1 year or more, where 29.8% of the respondents had been a member at their home gym for more than 5 years. Sixty two percent of the population exercises 2 to 4 days a week, and of the 570 Non-CrossFit respondents, only 400 exercisers completed the entire survey. Interestingly, 93% of the respondents were female.

Gender of responders	CrossFit	Non-CrossFit
Male	42 (23%)	28 (7%)
Female	140 (67%)	372 (93%)
	182	400
Age of participants	CrossFit	Non-CrossFit
<18	3 (2%)	2 (0%)
18-29	42 (23%)	77 (19%)
30-44	103 (57%)	196 (49%)
45-59	29 (16%)	113 (28%)
>60	5 (3%)	12 (3%)
	182	400
Exercise Frequency	CrossFit	Non-CrossFit
Exercise once a week	4 (2%)	60 (15%)
Exercise 2 to 4 days a week	102 (56%)	248 (62%)
Exercise 5 to 7 days a week	76 (42%)	72 (18%)
	182	400
Highest level of school completed	CrossFit	Non-CrossFit
Less than high school degree	2 (1%)	1 (0%)
High school degree or equivalent	6 (3%)	6 (2%)
Some college but no degree	42 (23%)	50 (13%)
Associate degree	13 (7%)	25 (6%)
Bachelor degree	65 (36%)	145 (36%)
Graduate degree	54 (30%)	173 (43%)
	182	400

Approx. avg household income	CrossFit	Non-CrossFit
\$0-\$24999	4 (2%)	25 (6%)
\$25000-\$49999	29 (16%)	37 (9%)
\$50000-\$74999	28 (15%)	62 (16%)
\$75000-\$99999	32 (18%)	57 (15%)
\$100000-\$124999	40 (22%)	67 (17%)
\$125000-\$149999	19 (10%)	37 (9%)
\$150000-\$174999	13 (7%)	35 (9%)
\$175000-\$199999	1 (0%)	14 (4%)
\$200000 and up	15 (8%)	57 (15%)
	181	391
Spend on personal fitness yearly	CrossFit	Non-CrossFit
\$0-\$999	32 (18%)	134 (34%)
\$1000-\$1999	84 (46%)	109 (27%)
\$2000-\$5000	62 (34%)	124 (31%)
\$5000-\$10000	4 (2%)	25 (6%)
\$10000+	0 (0%)	8 (2%)
	182	400

Table 3: Demographic Comparison Between CrossFit & Non-CrossFit Participants

Hypotheses Testing

Hypothesis 1: Extraversion Comparison. It was hypothesized that CrossFit individuals would exhibit higher levels of extraversion as compared to individuals who joined and participated regularly in Non-CrossFit gyms. A one-way ANOVA was used to evaluate significant differences for extraversion between CrossFit members and Non-CrossFit members. There was a statistically significant difference between the groups, $F(1, 579) = 6.21, p = .013$. The CrossFit group scored higher in extraversion ($M = .671, SD = .174$) as compared to the Non-CrossFit group ($M = .632, SD = .182$).

Hypothesis 2: Neuroticism Comparison. It was hypothesized that individuals who joined and participated regularly in a CrossFit Gym would exhibit lower levels of neuroticism as compared to individuals who joined and participated regularly in Non-

CrossFit gyms. There was not a statistically significant difference between the groups as determined by a one-way ANOVA, $F(1, 579) = .023, p = .878$. The CrossFit group was statistically similar in the neuroticism personality score ($M = .664, SD = .167$) as compared to the Non-CrossFit group ($M = .662, SD = .174$).

Hypothesis 3: Openness Comparison. It was hypothesized that no differences in levels of openness would be seen between individuals who joined and participated regularly in a CrossFit Gym and individuals who joined and participated regularly in Non-CrossFit gyms. There was not a statistically significant difference between the groups as determined by a one-way ANOVA, $F(1, 579) = .062, p = .804$. Thus, there was no difference between the CrossFit group in the open personality score ($M = .774, SD = .123$) and the Non-CrossFit group ($M = .772, SD = .128$).

Hypothesis 4: Conscientiousness Comparison. It was hypothesized that no differences in levels of conscientiousness would be seen between individuals who joined and participated regularly in a CrossFit Gym and individuals who joined and participated regularly in Non-CrossFit gyms. There was not a statistically significant difference between the groups as determined by a one-way ANOVA, $F(1, 579) = 1.604, p = .206$. The CrossFit group scored equal in conscientiousness ($M = .787, SD = .148$) to the Non-CrossFit group ($M = .771, SD = .142$).

Hypothesis 5: Agreeableness Comparison. It was hypothesized that no differences in levels of agreeableness would be seen between individuals who joined and participated regularly in a CrossFit Gym and individuals who joined and participated regularly in Non-CrossFit gyms. There was not a statistically significant difference between the groups as determined by a one-way ANOVA, $F(1, 579) = 1.201, p = .274$.

The CrossFit group agreeableness scores were statistically equal ($M = .851, SD = .111$) to the Non-CrossFit group ($M = .839, SD = .125$).

Summary of the results

The results of the study were used to investigate potential personality differences between individuals who join and participate regularly in CrossFit gyms versus individuals who join and participate in Non-CrossFit gyms. The results showed no significant difference between openness, conscientiousness, agreeableness and neuroticism. The results showed a significant difference in extraversion between CrossFit and Non-CrossFit individuals ($p = .013$).

Chapter V

Discussion

Introduction

The twofold purpose of this study was to answer the research questions: Are there significant personality differences between CrossFit members and members of Non-CrossFit gyms, as indicated by The Five Factor Model of Personality? And which factors in the FFM, if any, are different between the two groups? This chapter provides a summary of the results, conclusions, practical implications, and recommendations for future research.

While the topic of personality continues to gain awareness in the research community, several limitations still exist in the literature. Because the research community has not provided a unified definition of exercise personalities with preferred methods of exercise, the aim of this study was to explore if CrossFit draws a certain personality type that differs from that of other gym goers.

Comparison of FFM Scores between CrossFit and Non-CrossFit gym goers

The results of the study were used to investigate potential personality differences between individuals who join and participate regularly in CrossFit gyms versus individuals who join and participate in Non-CrossFit gyms. It was hypothesized that CrossFit individuals will exhibit higher levels of extraversion as compared to individuals who join and participate regularly in Non-CrossFit gyms. The results showed a significant difference in extraversion between CrossFit and Non-CrossFit individuals. The CrossFit individuals were in fact more extroverted than Non-CrossFit individuals. Thus, hypothesis one was supported.

It was also hypothesized that CrossFit individuals would show lower levels of neuroticism vs Non-CrossFit individuals. The results showed, however, no significant difference in neuroticism between the groups. Therefore, hypothesis two was not supported. There were also no significant differences for hypotheses 3-5; where the openness, conscientiousness, agreeableness scores did not differ between the CrossFit and Non-CrossFit groups. Hence, hypothesis three, hypothesis four, and hypothesis five were supported.

A similar study conducted by Fell and Geher (2018) examined whether CrossFit is associated with psychological and social benefits to individuals compared with Gold's Gym. This study included 188 participants, 69 Gold's Gym members and 119 CrossFit members who completed an online survey about their perceptions of their workout experience, their motivations for exercising, and they also completed measures of the Big Five personality traits. Results from this study supported this study by demonstrating that people who attend the two different gyms do not differ from one another in terms of socio-economic status or basic personality structure. However, they did find that those who attended CrossFit reported relatively positive outcomes as experiencing challenges, obtaining social recognition, and forming affiliative bonds with others.

To further support the higher extraversion, result of CrossFitters, a recent study by Sales et al. (2018) suggest that the motivations for engaging in CrossFit may be similar to those seen in sport participation, as CrossFit individuals reported higher levels of intrinsic motivations, such as enjoyment, challenge and affiliation, which may have an influence on facilitating long-term adherence in comparison with other exercise modalities. The

Sales et al. article also discusses health related motives as being extrinsic in nature but reflecting intrinsic characteristics, potentially also facilitating long-term adherence.

Sutin et al.'s (2016) findings support the notion that the interest, motivational, emotional, and interpersonal processes assessed by five-factor model traits partly shape an individual's engagement in physical activity, but their study does not compare different exercise memberships. Sutin et al's (2016) study was the first to conduct a meta-analysis using the Five Factor Model to examine personality correlates of physical inactivity, frequency of physical activity, and sedentary behavior. They found that lower neuroticism and higher conscientiousness were associated with more physical activity and less inactivity and sedentary behavior.

It is important to note that Whiteman-Sandland, Hawkins, & Clayton (2016) found evidence that might suggest a bias. Whiteman-Sandland, Hawkins, & Clayton were the first to use a cross sectional study to compare social capital and general belongingness perceptions of a CrossFit gym versus a more traditional gym. It was found that CrossFit gym members reported significantly higher levels of social capital and community belongingness compared with traditional gym members. However, regression analysis showed neither social capital, community belongingness, nor gym type was an independent predictor of gym attendance. This research supports the idea that Extraversion correlates with CrossFit participation.

However, more research is needed to gain a clear understanding of personality differences among gym memberships. To date only two studies have used quantitative methods to compare the differences and extraneous variables may have influenced the results (e.g., education of participants, age of participants, income level of participants,

gender, etc.). Until further studies are conducted, conclusions on the topic lack significant scientific backing to draw generalizable conclusions.

Implications of the Study

The results of this study showed a significant difference in extraversion between CrossFit and Non-CrossFit individuals. This study could be applied to health and fitness practitioners to improve customer return and enhance engagement levels in exercise programs.

In Goldberg's (1990) "Description of Personality", he defined extraversion as someone who is outgoing, talkative, sociable, and enjoys social situation; whereas Ashton, Lee, & Paunonen, (2002) asserted that the real core of the Extraversion factor is the tendency to behave in ways that attract social attention.

Howard, Cunningham, and Rechnitzer's (1987) study used the FFM to look at personality type and how it influences exercise participation. They affirmed that individuals with high extraversion were more likely to engage in swimming, aerobic conditioning, dancing, and tennis; whereas less extraverted individuals were more inclined to engage in gardening and home improvement. This fundamental understanding of the personality differences between CrossFit and Non-CrossFit members can be helpful in sustaining exercise adherence and sustainability to either gym by developing a better understanding of the personality traits of their members to increase membership growth, to better advertise to a specific target market, build relationships, provide more social support and understanding, and achieve better adherence rates.

Limitations

While the results of this study helped answer several relevant questions, the study design is not without limitations. One major limitation of this study was the sample. Based on the response rate and distribution of individuals who participate in CrossFit and Non-CrossFit, selection bias may have influenced the sample. The respondents were also overwhelmingly female. In fact, of the 582 surveys reviewed, 88% of the respondents were female. Future studies may try alternative methods to get a better sample or response rate from both genders (e.g., researchers could attend various gyms).

Another limitation of this study was the instrumentation. While the FFM has sufficient validity support, it does not encompass every aspect of personality (e.g., Alvergne et al., 2010; Eaves, Martin, Heath, Hewitt, & Neale, 1990; Gurven, Rueden, Massenkoff, Kaplan & Vie, 2013; Nettle, 2005; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Another limitation was the integrity of the survey taken along with limited outcomes. The structured questionnaire with close ended questions leads to limited outcomes outlined in the research proposal. Also, the respondents have limited options of responses, based on the selection made by the researcher. This as a result may have had small influences on the main effect of this study. To counteract the limitations of the FFM, future research may use more than one instrument to measure exercise personality to capture a more comprehensive picture.

Areas for Future Research

Based on the results of this study, there are several recommendations for future research. First, some of the limitations within this study may be minimized or eliminated

by reformatting the procedures and collecting data to ensure gender disparity is present in the study; more males are needed to provide a greater representation of the fitness population. Other demographics, such as participant's education and income levels were not pertinent to the study, but could be useful in understanding further motivations and behaviors.

Second, future research could look more in depth at exercise adherence and how it relates to personality type. For example, in this study, CrossFit participants were 233% more likely to exercise five to seven days a week versus Non-CrossFit participants. However, both CrossFit and Non-CrossFit participants had equal ratios for exercise frequency attendance of two to four days.

Future research could also look more into the exercise behaviors of individuals. While question number four listed below was included in the online survey to understand exercise behaviors, it was not pertinent to the research question. However, future research could benefit from understanding why participants felt the need to exercise. In Table 4 and Table 5 below, the results of this question were very similar between each group, except notably in two key areas: social interaction and appearance. CrossFit members are more likely to exercise for social interaction and to improve their appearance in comparison to Non-CrossFit members.

CrossFit (203 responses) Why do you feel you engage in exercise?	Not True		Sometimes True		Very True
I exercise because family/friends/partner/society tells me to	54.19%	9.36%	21.18%	2.46%	2.46%
I exercise because its fun and I enjoy it. It makes me feel good	0.49%	0.49%	6.90%	12.81%	68.97%
I exercise to be fit	0.00%	0.00%	9.85%	10.34%	68.97%
I exercise to manage stress	2.96%	0.99%	12.81%	11.33%	61.58%
I exercise for weight management	4.93%	4.43%	26.60%	14.78%	38.42%
I exercise for social interaction/camaraderie	5.42%	3.94%	29.56%	18.23%	32.02%
I exercise for competition training purposes	34.48%	7.39%	21.18%	9.85%	16.75%
I exercise to improve my appearance	2.46%	2.46%	30.05%	21.67%	43.35%
I consider exercise as something I've always done	21.67%	6.90%	22.66%	10.34%	38.42%

Table 4: Exercise Motivations of CrossFit Members

Non-CrossFit (562 responses) Why do you feel you engage in exercise?	Not True		Sometimes True		Very True
I exercise because family/friends/partner/society tells me to	61.39%	12.10%	21.71%	3.20%	1.42%
I exercise because it's fun and I enjoy it. It makes me feel good	1.07%	0.71%	14.41%	16.90%	66.73%
I exercise to be fit	0.53%	0.53%	9.25%	16.73%	72.78%
I exercise to manage stress	3.91%	1.78%	25.44%	14.06%	54.63%
I exercise for weight management	6.05%	3.91%	26.87%	16.01%	46.44%
I exercise for social interaction/camaraderie	19.75%	11.74%	37.72%	12.63%	17.97%
I exercise for competition training purposes	22.24%	6.76%	26.69%	14.77%	29.36%
I exercise to improve my appearance	5.16%	6.58%	38.08%	17.79%	32.21%
I consider exercise as something I've always done	24.73%	11.21%	24.56%	12.10%	27.22%

Table 5: Exercise Motivations of Non-CrossFit Members

Given the varying responses from different subgroups, it would be beneficial to utilize this information on motivational differences to better prescribe tailored physical activity to create further understanding of the relationships presented (Gucciardi, 2012; Gucciardi & Gordon, 2009; Gucciardi, Gordon, & Dimmock, 2009c; Thelwell, Weston, & Greenlees, 2005).

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APPENDIX A

Survey Monkey

You are invited to participate in an online survey regarding exercise and personality. This survey will serve in fulfillment of the requirements for a master's thesis. All information you provide will be kept confidential. The survey will take approximately 10 to 15 minutes to complete. For any questions about the study, please contact Courtney E. Johnson at ce-johnson3@wiu.edu.

By clicking below, you are agreeing to participate.

1. Do you exercise regularly?

- Yes
 No

2. In a typical week, how frequently do you exercise?

- Once a week
 2-3 days per week
 4-5 days per week
 6-7 days per week

3. About how long have you been regularly exercising?

- Less than 3 months
 3-6 months
 6-12 months
 1-5 years
 6-10 years
 11 years or more

4. Why do you feel you engage in exercise?

	Not true for me		Sometimes true for me		Very true for me
I exercise because friend/family/partner/society tells me to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise because its fun and I enjoy it. It makes me feel good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise to be fit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise to help manage stress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise for weight management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise for the social interactions/ camaraderie.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise for competition training purposes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise to improve my appearance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider exercise as something I've just always done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Have you ever heard of CrossFit?

- Yes
 No

* 6. Are you a member of a CrossFit affiliate?

- Yes
 No

CrossFit Members

In the section below, we'd like to learn more about your exercise habits at your CrossFit facility.

7. How long have you been a CrossFit member?

- Less than 3 months
- 3-6 months
- 6-12 months
- 1-4 years
- 5 years or more

8. Do you complete daily WODs?

- Yes
- No

9. In a typical week, how many days do you complete a daily WOD?

- I don't regularly complete WOD's
- Once a week
- 2 to 4 days a week
- 5 to 7 days a week

*** 10. Do you compete in any CrossFit competitions?**

- Yes
- No

11. How many CrossFit competitions do you participate in annually?

- 1-3
- 4-6
- 7-9
- 10 or more

12. Do you participate in any other forms of exercise outside of CrossFit?

- Yes
 No

13. If yes, what types? (Please select all that apply)

- Individual workouts (running, swimming, bicycling, weight training, etc.)
 Group Fitness (Zumba, Yoga, Cycling, water aerobics, TRX, etc.)
 Group Sports (Basketball, Volleyball, Football, Soccer, Hockey, Tennis, Badminton, etc.)
 Individual Sports (Golf, Triathlete, Run, Olympic Lifting, Karate, Wrestling etc.)
 Home & Garden
 Home Fitness (DVDs, YouTube, Wii, etc.)
 Other (please specify)

14. More specifically, what are your preferred top 3 methods of exercise?

	1st most preferred	2nd most preferred	3rd most preferred
CrossFit WODs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual Strength & Conditioning (weight training, plyometrics, High intensity interval training (HIIT) sprinting, push/pull carry)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual Cardio (running, swimming, cycling, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual Sport (CrossFit competitions, Golf, triathlon, Olympic lifting, karate, wrestling, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group Fitness Classes (Zumba, yoga, cycling, water aerobics, TRX, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group Sports (basketball, volleyball, football, soccer, hockey, tennis, badminton, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home & Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Gym Members

In the section below, we'd like to learn more about your exercise habits at your current gym.

* 15. Are you a member of a gym?

- Yes
 No

16. What gym are you a member? *(check all that apply)*

- Gold's Gym
 Anytime Fitness
 Planet Fitness
 Lifetime Fitness
 Snap Fitness
 YMCA
 Other (please specify)

17. How long have you been a member at your gym?

- Less than 3 months
 3-6 months
 6-12 months
 1-4 years
 5 years or more

18. In a typical week, how many days do you exercise at your gym?

- I don't regularly exercise
 Once a week
 2 to 4 days a week
 5 to 7 days a week

19. At your gym, which of the following exercises do you utilize? *(check all that apply)*

- Cardio
- Free Weights
- Machines
- Running track
- Courts (group play such as Basketball, tennis, volleyball, etc)
- Group Fitness
- Personal Training
- Pool/ Sauna
- Other (please specify)

20. Do you participate in any other forms of exercise outside of your gym?

- Yes
- No

21. If yes, what types? (Please select all that apply)

- Individual workouts (running, swimming, bicycling, weight training, etc)
- Group Sports (Basketball, Volleyball, Football, Soccer, Hockey, Tennis, Badminton, etc.)
- Individual Sports (Golf, Triathlete, Run, Olympic Lifting, Karate, Wrestling etc.)
- Home and Gardening
- Home Fitness (DVDs, YouTube, Wii, etc.)
- Other (please specify)

* 22. Do you compete in any fitness competitions? (5k, mud runs, triathlon, sports, weightlifting, etc.)

- No
- Yes (please specify)

23. What are your preferred top 3 methods of exercise?

	1st most preferred	2nd most preferred	3rd most preferred
Individual Strength & Conditioning (weight training, plyometrics, HIIT (high intensity interval training, sprinting, push/pull carry)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual Cardio (running, swimming, cycling, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual Sport (golf, triathlon, Olympic lifting, karate, wrestling, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group Strength & Conditioning (weight training, plyometrics, High Intensity Interval Training (HIIT), sprinting, push/pull carry etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group Fitness Classes (Zumba, yoga, cycling, water aerobics, TRX, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group Sports (Basketball, Volleyball, Football, Soccer, Hockey, Tennis, Badminton, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home & Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Openness, Conscientiousness, Agreeableness, Extraversion, and Neuroticism. (OCEAN)

Now we are going to switch gears. Imagine you were looking down at yourself throughout your life. Using the scale below, please rate each statement according to how well it describes your enduring characteristics. Base your ratings on how you really are, not how you would like to be. Please remember there is no right or wrong answer.

24. I feel that I am..

	Disagree		Neutral		Agree
I am the life of the party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel little concern for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am always prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get stressed out easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a rich vocabulary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't talk a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I leave my belongings around.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am relaxed most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable around people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I insult people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a vivid imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep in the background.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sympathize with others' feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make a mess of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I seldom feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not interested in other people's problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not interested in abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I start conversations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not interested in other people's problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get chores done right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easily disturbed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Disagree		Neutral		Agree
I have excellent ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have little to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a soft heart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often forget to put things back in their proper place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get upset easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have a good imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talk to a lot of different people at parties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not really interested in others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like order.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I change my mood a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am quick to understand things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like to draw attention to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take time out for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I avoid or neglect my duties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have frequent mood swings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use difficult words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't mind being the center of attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel others' emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I follow a schedule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get irritated easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend time reflecting on things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am quiet around strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make people feel at ease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am exacting in my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am full of ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Demographic Information

In this final section, we would like to learn more about you. Your responses will be held in confidence and only used for research purposes.

25. Are you male or female?

- Male
 Female

26. What is your age?

- <18
 18 - 29
 30 - 44
 45 - 59
 60+

27. What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
 High school degree or equivalent (e.g., GED)
 Some college but no degree
 Associate degree
 Bachelor degree
 Graduate degree

28. What is your approximate average household income?

- \$0-\$24,999
- \$25,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$124,999
- \$125,000-\$149,999
- \$150,000-\$174,999
- \$175,000-\$199,999
- \$200,000 and up

APPENDIX B

Five Factor Model of Personality Inventory (FFMI)

	Disagree		Neutral		Agree
I am the life of the party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel little concern for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am always prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get stressed out easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a rich vocabulary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't talk a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I leave my belongings around.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am relaxed most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable around people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I insult people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a vivid imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep in the background.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sympathize with others' feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make a mess of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I seldom feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not interested in abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I start conversations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not interested in other people's problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get chores done right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easily disturbed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have excellent ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have little to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a soft heart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often forget to put things back in their proper place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get upset easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have a good imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talk to a lot of different people at parties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not really interested in others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like order.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I change my mood a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am quick to understand things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like to draw attention to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take time out for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shirk my duties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have frequent mood swings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use difficult words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't mind being the center of attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel others' emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I follow a schedule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get irritated easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend time reflecting on things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am quiet around strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make people feel at ease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am exacting in my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am full of ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

APPENDIX C

Initial Contact Email

Initial contact to CrossFit and Non CrossFit Gym Owners

To whom it may concern:

Is understanding your gym member population a concern for you? Unfortunately, very little information currently exists regarding exercise personality and exercise memberships. As part of my master's thesis I hope to answer a few questions on the topic with the goal of obtaining a better understanding of the personality traits of exercisers. With a better understanding of personality and exercise, gym owners, managers, coaches, etc. could potentially increase membership growth, better advertise to a specific target market, build better relationships, provide more social support and understanding, and achieve better adherence rates.

If you are willing to help me collect data on exercise personality for my thesis, all you will have to do is share the online survey with members of your gym via social media (Facebook and Instagram). Please note, your facility is not responsible for data collection, you will be acting as a liaison only with the purposes of recruiting participants for this study.



I would ask that you simply upload the attached image along with the link to the survey:

https://www.surveymonkey.com/r/ExercisePersonality_2017.

The online survey will ask a few questions on your exercise background and preferences and then you will fill out a personality profile. After you complete the survey your ratings will be compared to ratings provided by other gym goers to give a more comprehensive picture.

All provided information will be kept confidential. The survey will take approximately 10 to 15 minutes to complete. For any questions about the study, please contact Courtney E. Johnson at ce-johnson3@wiu.edu or Dr. Steven Radlo at aj-radlo@wiu.edu. Thank you for your time and consideration.

All the best,

Courtney E. Johnson

About the researcher: I am a graduate student at Western Illinois University, working towards a Master's degree in Kinesiology. I became interested in the research topic after conversing with several professors on the topic of exercise psychology and exercise personality. I plan on publishing the findings from this study to help advance exercise psychology in fitness and create a better understanding of personality differences within different gyms.

Debriefing Script

Thank you for participating in this study. If you have any questions, concerns, or reports regarding your rights as a research participant, please contact the IRB Compliance Specialist at (309) 298-1191 or IRB@wiu.edu. Otherwise, questions can be directed towards the student investigator at Ce-johnson3@wiu.edu or Dr. Steven Radlo at Sj-radlo@wiu.edu. If you would like to be informed of the findings of this study you can request to be put on a mailing list and information will be sent to you when it is made available to the public. Thank you again for your participation.

APPENDIX D
Informed Consent

**Western Illinois University
Department of Kinesiology**

CONSENT TO ACT AS A HUMAN SUBJECT

Project Title: Personality and Exercise: the Five Factor Model of Personality

Project Director: Dr. Steven Radlo, Ph.D.
Department of Kinesiology
Western Illinois University
Sj-radlo@wiu.edu

Student Investigator: Courtney E. Johnson
ce-johnson3@wiu.edu

Purpose of the Investigation:

You are being asked to participate in a graduate research study about exercise personality. This research study is part of the graduate requirements for a thesis for WIU. This survey is not being conducted by any outside gym. The goal of this study is to identify personality traits of gym goers and to differentiate the personality traits between different gyms to gain a better understanding of gym member's personality profiles. Participation in this study should take no more than 10-15 minutes.

Risks and Benefits:

Possible risks or discomforts associated with the study are minimal or no more than what you would encounter in your typical daily activities. A primary goal of this study is to collect data that can be used by future gyms to better understand their gym member's personality traits.

Anonymity and Confidentiality:

You will be asked to identify your gym membership and exercise preferences in the survey, however, your answers will be kept private. Only members of the research team will have access to this information. The results of this project will be reported in aggregate form only. Your name will not be associated with any written reports or publications.

Right to Withdraw:

You have the right to withdraw your participation in this study at any time during the research project.

You do not have to answer any question you do not want to answer. Participation in this study is voluntary.

IRB Approval:

This project has been reviewed and approved by the WIU Institutional Review Board. Questions concerning your rights as a participant in this research may be directed to IRB Administrator at (309) 298-1191 or IRB@wiu.edu.

Questions

If you have any questions about the study, you may contact Courtney E. Johnson at ce-johnson3@wiu.edu or Dr. Steven Radlo at aj-radlo@wiu.edu.

Statement of Consent

I have read the above information. I have had an opportunity to ask questions and I have received answers.

- I consent to participate in the study (check box)
- I do not consent to participate in the study (check box)