



Challenge, Commitment, Community, and Empowerment: Factors that Promote the Adoption of CrossFit as a Training Program

[SJ thesportjournal.org/article/challenge-commitment-community-and-empowerment-factors-that-promote-the-adoption-of-crossfit-as-a-training-program/](http://thesportjournal.org/article/challenge-commitment-community-and-empowerment-factors-that-promote-the-adoption-of-crossfit-as-a-training-program/)

May 18, 2017

U.S. Sports Academy

Authors

Duncan Simpson Ph.D1*; Tanya R. Prewitt-White, Ph.D2*; Yuri Feito, Ph.D, MPH, FACSM3*; Julianne Giusti, MS1; Ryan Shuda, MS4;

* Equal contributors

Institution

1 IMG Academy, Bradenton, FL, USA

2 University of Illinois – Chicago, Chicago, IL, USA

3 Kennesaw State University, Kennesaw, GA, USA

4 Adler University, Chicago, IL, USA

Corresponding Author

Yuri Feito, Ph.D, MPH, FACSM

Dept. Exercise Science & Sport Management, Kennesaw State University

520 Parliament Garden Way NW

MD 4104 | Bldg. 41 | Office 4233

Kennesaw, GA 30144

Email: yfeito@kennesaw.edu

ABSTRACT

CrossFit training is a relatively new training program characterized by “high intensity, constantly varied, functional movements” (Glassman, 2007). Considering the initiation of exercise is usually affected by multiple factors, the authors qualitatively examined the factors that encourage individuals with more than three months of CrossFit training experience to adopt and maintain this high-intensity training modality. Seventeen individuals over 25 years old were purposively sampled and contacted by an investigator for an interview. Semi-structured interviews were selected as the primary form of data collection. Analyses of the interviews led to the following four overarching themes: Accepting and Overcoming Challenge, Commitment, Connection and Community, and Empowerment and Transformation.

Keywords: Exercise, Physical Activity, High Intensity Exercise, Interval training, HIFT

INTRODUCTION

CrossFit training is a relatively new fitness program with over 12,500 affiliates around the world (CrossFit Inc., 2017). This interval-training program is characterized by high intensity, constantly varied, functional movements (Glassman, 2007). CrossFit gyms are known as “boxes” where participants complete Workouts Of the Day (WODs), which involve a large variety of scalable exercises in an attempt to make the program inclusive to all ability levels. In general, each workout begins with a dynamic warm-up, followed by a demonstration of the proper biomechanics and form of a specific skill and/or lift for that day, which is provided by a CrossFit coach. Following these instructions, participants spend individualized time on each skill or lift and are given feedback from the coach. The WOD typically ends with a conditioning circuit completed by rounds/repetitions for time (RFT) or as many repetitions as possible (AMRAP). There is also a competitive element to CrossFit whereby individuals can compete against each other in a series of physical challenges at local and regional competitions. The culminating event is known as The CrossFit Games, and since its inception in 2007 the purpose of the games is to find “the fittest [athlete(s)] on earth” (CrossFit.com).

Despite its monumental rise in popularity, there exists limited peer-reviewed research on CrossFit. The research that does exist has focused on aerobic fitness and body composition (Smith, Sommer, Starkoff, & Devor, 2013); motivational variables (Fisher, Sales, Carlson, & Steele, 2016; Partridge, Knapp, & Massengale, 2014); psychological concomitants (Köteles, Kollsete, & Kollsete, 2016); culture (Dawson, 2015); the use of music in CrossFit (Brupbacher, Harder, Faude, Zahner, & Donath, 2014); using CrossFit as a sport education model for secondary school students (Sibley, 2012); improving health-related fitness in adolescents (Eather, Morgan, & Lubans, 2016) and issues related to injury and safety (Hak, Hodzovic, & Hickey, 2013; Weisenthal, Beck, Maloney, DeHaven, & Giordano, 2014). Even though its safety has been scrutinized in the mainstream media (Cornwall, 2013; Gregory, 2014; Helm, 2014), empirical evidence suggests this training modality is not any more dangerous than other forms of physical training (Hak et al., 2013; Weisenthal et al., 2014). In addition to the research studies mentioned above there have been numerous books written about CrossFit (Belger, 2012; Herz, 2014; Murphy, 2012). However, despite the increased participation, media interest, and research addressing safety concerns, there is still limited sport and exercise psychology research on this popular fitness modality.

One study that has explored CrossFit from a psychological perspective investigated the motivational variables used within CrossFit facilities (Partridge et al., 2014). Using the Achievement Goals Questionnaire for Sport [AGQ-S; (Conroy, Elliot, & Hofer, 2003)] authors found that females reported higher levels of Mastery Avoidance (i.e., focused on avoiding intrapersonal or task-based incompetence), whereas males reported higher levels of Performance Approach (i.e., focused on achieving normative competence). As well as gender, Partridge et al., (2014) investigated membership time and divided participants into two groups based on the median membership time of 6 months. Results revealed participants who had been a member of a CrossFit gym for less than 6 months reported higher levels of both Master Approach (i.e., focused on achieving intrapersonal or task-based competence) and Mastery Avoidance than those who were members for greater than 6 months. However, researchers found no significant difference in perceptions of the motivational climate between less and more experienced members (Partridge et al., 2014).

In another study, motivational characteristics of CrossFit participants were compared to other resistance training modalities, Fisher, et al. (2016) found Crossfitters reported higher levels of intrinsic motives, such as challenge, enjoyment, and affiliation. Whereas, participants who worked one-on-one with a personal trainer reported higher health related motives. The authors concluded that Crossfitters may be more intrinsically motivated when compared to other resistance training modalities.

Köteles et al., (2016) used a variety of online surveys to investigate the relationships between characteristics of CrossFit (i.e., time elapsed from starting with training and frequency of sessions) and indicators of well-being, self-esteem, body awareness, satisfaction with body image, and perceived body competence. In regression analysis,

they found well-being was connected with being male, time elapsed from starting with CrossFit, dissatisfaction with body image, and body awareness. The authors also found global self-esteem to be related to age, body competence, and body dissatisfaction. However, frequency of CrossFit was not connected to positive affect, negative affect, or well-being. Furthermore, duration and frequency of CrossFit was not related to global self-esteem, body awareness, body image dissatisfaction or body competence. Kőteles, et al. (2016) concluded CrossFit training is “not connected with higher levels of psychological functioning (well-being, affect, body awareness, and self-esteem) and satisfaction with one’s body” (p. 45). While prior research has been helpful in understanding the motivational variables associated with CrossFit and the psychological concomitants of CrossFit training, the methodologies (i.e., standardized questionnaires) used have limited participants’ responses to the parameters of the questions being asked; thus, the study potentially neglected to uncover the richness and complexity of variables associated with exercise adoption.

Even though high intensity training programs have been a common practice among athletes and the military for years, it was not until recently that these programs have been adopted by the general population. The success of CrossFit is perhaps surprising given that exercise intensity trends reveal an inverse relationship with adoption and adherence rates (Perri, Anton, Durning, Ketterson, Sydeman, Berlant, Kanasky, Newton, Limacher, & Martin, 2002; Sallis, Haskell, Fortmann, Vranizan, Taylor, & Solomon, 1986). However, personal variables and other characteristics of the activity also seem to moderate the adoption of various modes and intensities of physical activity (Buckworth, Dishman, O’Connor, & Tomporowski, 2013). Yet, to date, research has failed to investigate the various elements associated with CrossFit adoption.

Statistics tracking the global adoption and dropout rates of CrossFit are not currently available; however, the company has experienced significant growth within a relatively short of period of time since CrossFit, Inc. was founded in 2000. Considering the initiation of exercise is usually affected by myriad of complex factors (Aaltonen, Rottensteiner, Kaprio, & Kujala, 2014; Parfitt, Rose, & Burgess, 2006; Ryan, Frederick, Lepas, Rubio, & Sheldon, 1997), further research exploring CrossFitters’ experiences of adopting this high-intensity fitness modality appears warranted. Therefore, the purpose of this investigation was to qualitatively examine the factors that encouraged individuals with more than three months of CrossFit experience to adopt this exercise program.

METHODS

Participants

In an attempt to understand why individuals participate in CrossFit, the researchers sought to interview participants who were considered ‘low-risk’ for cardiovascular, pulmonary or metabolic disease based on the American College of Sports Medicine classification (American College of Sports Medicine, 2013), and who were willing to discuss their experiences of adopting CrossFit. In addition to a low-risk category, inclusion criteria included participation and membership in a CrossFit affiliate within the last year, were over 25 years of age, and maintained adherence (i.e., 3 x per week) to this training modality for at least three months. The study specifically targeted participants over 25 years of age, as previous research has shown participation in recommended levels of physical activity generally decrease throughout adulthood for both males and females (Buckworth et al., 2013; Lox, Ginis, & Petruzzello, 2014). Further, researchers believed these individuals could have more external barriers (e.g., work commitments, family obligations, financial constraints) to adopting an exercise program.

Procedures

Upon approval from a University Institutional Review Board, homogeneous purposive sampling was used to obtain participants who met the study’s inclusion criteria. Prospective participants were recruited by posting a Google forms link to CrossFit forums, CrossFit related Facebook groups and sending emails to personal contacts (snowball sampling). The information posted described the purpose and inclusion criteria of the study. Participants were then asked to provide their names and e-mail on the Google form if they were interested in participating in the study.

A total of 67 participants demonstrated interest in our study and completed the basic contact information requested. Of those who completed the survey and were eligible, 20 individuals were randomly selected and contacted by an

investigator and scheduled for an interview. Prior to each interview, participants were asked to provide informed consent and were given a basic demographic survey. These forms were emailed to the participants and returned to the researchers prior to the interview. Due to the wide geographical location of participants, all interviews were conducted via video conferencing (Skype) or telephone and digitally audio recorded. The interviews were conducted by two of the authors, both of whom have previous experience and expertise in conducting qualitative research.

The final sample size included a total of 17 participants (12 female, 5 male), ranging in age from 26 to 51 years old ($M = 34.9$, $SD = 8.8$). The final number of participants was ultimately determined by data saturation, which occurred when information obtained in interviews became redundant (Thomas & Pollio, 2002), and a point where no new information added to the understanding of physical activity adoption (Strauss & Corbin, 1998). Therefore, three participants from the originally selected 20 were not interviewed. Additional descriptive data for our participants is depicted in table 1.

Table 1: Participants socio-demographic information by gender (N = 17)

		Males	Females	Total
Ethnicity	Non-Hispanic	3	12	15
	Hispanic	2	0	2
Race	Asian	1	1	2
	Caucasian	3	11	14
	Other	1	0	1
Marital Status	Single	2	6	8
	Married	3	6	9
Education Level	Some College	1	0	1
	Bachelors Degree	3	4	7
	Masters Degree	0	5	5
	Doctorate/Professional Degree	1	3	4
Employment	Employed	4	9	13
	Self-employed	1	2	3
	Student	0	1	1
HS* Sport Participation	No	1	4	5
	Yes	3	9	12
Income	< 30,000	0	1	1
	30,000 – 59,999	0	4	4
	60,000 – 79,999	1	2	3
	80,000 – 99,999	1	2	3
	≥ 100,000	2	3	5

* High School

Semi-Structured Interview Guide

Semi-structured interviews were selected as the primary form of data collection for three main reasons. First, semi-

structured interviews are well suited to explore complex issues while enabling probing for further information and clarification to answers (Barriball & While, 1994). Second, the authors felt the breadth of information required precluded the use of existing standardized psychometric tools. Third, it was a pragmatic decision which allowed the interviewer to address the determinants of physical activity adoption and ask a large number of specific questions without having to remember how to word or structure questions.

In accordance with recommendations for semi-structured interviewing (Gorden, 1975), the wording and sequence of questions remained the same for each respondent. However, to ensure the data was not misinterpreted, the interviewer had the freedom to probe unclear or ambiguous words or phrases, which in turn helped to validate responses. Furthermore, Patton (1990) suggested that probing allows for interactions between the researcher and participant, which develops rapport and reduces the risk for socially desirable answers. It should be noted that all probes were based on participants' initial responses to the semi-structured guide. In addition, at the end of the interview participants were asked if they had any other thoughts or experiences that they were unable to share, the end of the interview in order to ensure participants had the opportunity to provide all relevant information.

To formulate the interview guide, an extensive review of literature (Buckworth, 2000; Dishman, Sallis, & Orenstein, 1985; Trost, Owen, Bauman, Sallis, & Brown, 2002) was conducted to identify determinants of physical activity adoption. Based on this research and the recommendations of Buckworth et al., (2013) these determinants were divided into five broad topic areas: (a) psychological factors, (b) behavioral attributes and skills, (c) social and cultural factors, (d) physical environment factors and (e) physical activity characteristics. Within each topic area the researchers worked as a team to develop appropriate questions. These questions were subsequently distributed to other faculty with expertise in physical activity research to judge content validity. Through this process, ambiguous, leading questions, and general criticisms were discussed and corrected. Subsequently, there were inclusions and exclusions of questions and the arrangement and wording of the interview guide changed over time. Once an initial draft had been formulated it was pilot tested with two individuals who met the inclusion criteria. The pilot testing resulted in no further changes. The entire rigorous process resulted in an in-depth interview guide consisting of 53 open-ended questions that were designed to capture the participants' experiences of adopting CrossFit (Figure 1).

Figure 1: [Click here to view the PDF.](#)

Data Analysis

The general procedures used in this study were consistent with Côté and colleague (1993) guidelines for organizing and interpreting qualitative data. First, transcripts were read in their entirety individually by the authors to get a whole sense for the participants' experiences. During the second reading, the authors engaged in several conference calls to identify meaning units (e.g., words, phrases or statements) that were deemed as significant. Once this process was complete similar meaning units were grouped and analyzed to form themes. This process continued until the research team believed all meaning units fit into the organizing system and no new themes or categories emerged (Cote et al., 1993). Once this was achieved, the lower and higher order themes were grouped to form the four major themes that encompassed these participants' experience of and adoption to CrossFit. The numbers in parentheses indicate the total number of participants (N =17) that discussed the sub-theme as it related to the major theme. All major themes were discussed by all 17 participants. Interviews ranged in length from 44–96 minutes (M = 57.43 min).

RESULTS

Analyses of the interviews led to the following overarching themes: Accepting and Overcoming Challenge, Commitment, Connection and Community, and Empowerment and Transformation. Representative quotes supporting the themes are provided.

Accepting and Overcoming Challenge

Accepting and overcoming challenge was a prominent aspect of the participants' experiences and stemmed mostly from the questions on psychological factors influencing the adoption of physical activity. This dimension of experience included overcoming self-doubt (16), attitudes towards physical activity (17), perceived barriers (15),

feelings of control (14), previous habits (17), as well as laziness or lack of time (14). The participants expressed that CrossFit is a demanding and rigorous workout regimen and felt as though they needed to embrace the challenge that can come with exerting one physically:

- For me, and I think that applies to everyone too, is just pushing the limit, its just getting used to pain and welcoming pain in your life, so it's challenging yourself. For me the main thing behind CrossFit is just constantly challenging yourself, challenging your limit, challenging what you think what's the maximum you can do. (Participant 13)

Moreover, many participants noted that they did not challenge themselves physically prior to CrossFit and felt as though their lack of physical fitness was revealed in their first day attending CrossFit. Unbeknownst to the participants, their fitness levels were not as high as they had perceived them to be. Thus, in their first day of CrossFit participants described being physically challenged unlike they ever had been before during an exercise workout. In addition, participants noted feeling overwhelmed and intimidated by the workout itself:

- I think the biggest thing was I drove there with a friend and we got there and they were talking about rope climbing. I didn't even do rope climbing when I was in middle school or high school, so I was like this is not going to work, but they were being kind and just taught us a scaled down version...but, anyway I just remember feeling like I'll probably never get to the level of climbing a rope, which is funny. But, that's what really sticks out to me just right off the bat, having an exercise that I was in no way accomplishing. I only did an AMRAP [as many rounds as possible] of 20 minutes, which was great for the first day. I remember everyone was working out for the same distance so it wasn't like I was completely far behind. I just remember feeling really nervous and a little bit inadequate. It is a little bit intimidating the first couple times you go; I'll definitely say that. (Participant 17)

Despite feelings of challenge and uncertainty, participants generally felt accepted as coaches modified exercises and participants realized it "wasn't impossible" to finish the workout. Additionally, participants expressed feeling intimidated by seeing others successfully completing CrossFit routines. Yet, through observing others complete a WOD they understood that they too could complete the workouts and in essence, experience increased self-efficacy through the modeling of other CrossFitters:

- I could tell you it was pretty intimidating. You know it. I'm not sexist or anything like that, but when you get your butt whooped by a pregnant lady, it pretty much tears you down to the core. I went home and told my wife, "look, you know, I couldn't even beat the pregnant lady working out, I'm not sure if this is for me." So, seriously, it's definitely intimidating, but it was fun because like I said, I had some coaches and people were supportive. All kidding aside it was something very good and it was challenging. And you look at it and say, "hey there's a lady that's pregnant, she's you know, five, six, seven months pregnant, she's doing it so you better start doing it or you can't do it, there's no excuses on it. Oh, it was brutal. (Participant 4)

Participants labeled CrossFit workouts with words such as "brutal" or "challenging" and also rated the intensity level of CrossFit workouts as high; however, individuals admitted their perceived intensity levels could differ. Furthermore, participants mentioned that it does not necessarily matter how hard one is working, as long as an individual is doing the workout. As Participant 1 explained, "It [the workout] has to be at a high level. It's a race pretty much between yourself, your internal clock, or you are at a race with other people, so your intensity level is always high, because you either want to finish first or before the person next to you." However, there were also participants that claimed they may not be working as intensely as other exercisers and this was acceptable and what makes CrossFit unique:

- If I go all out at the beginning I'm not going to have anything left for the end. I mean it is an intense workout, but I'm also not going to make myself throw up every day because that isn't any fun. It is probably moderate to, like on a scale to one to ten it is probably a 7. I'm not super duper intense because I know I have to be able to survive. But, you can tell by the end with how sweaty I am and how red my face is that I was working. (Participant 16)

According to participants, the uniqueness of CrossFit is that one's effort and perceived exertion can alter and may often times depend upon the intensity of those around you. "I'd say the intensity depends on the folks around you and the coaches pushing you. I mean it can be as intense for all of the participants." (Participant 15)

The participants elaborated that CrossFit is never going to seem "easy" despite someone's individual intensity level. More specifically, Participant 13 stated, "I don't think I've ever said, 'that was easy'". I might have said something like, "it wasn't that hard" or "it wasn't that bad." I'd say it's always going to push you, it's always going to make you feel pretty tired afterwards." The participants had come to accept the fact that CrossFit workouts are going to be challenging and had committed to following through with the CrossFit program.

Commitment

Participants viewed their commitment as the integral aspect of their success. This theme developed from the questions associated with behavioral attributes and skills, physical activity characteristics, and physical environmental factors. As described by Participant 14, "You have to be committed to it and be willing to put work into it. I didn't get results by putting in half the work. I go there and bust my butt every single time; I go in there and I leave knowing that I tried my hardest." Participants' commitment was enhanced by their motivations (17) to attend CrossFit daily. As Participant 5 mentioned her motivation was "staying healthy...that's my main motivation for it!" In addition, living a long, healthy life with one's family was a strong motivator for the participants as reflected in Participant's 6 words, "to be healthy, to live a long healthy life, to keep up with my daughter and keep my energy level high." Setting a positive and healthy example for one's children was also important to several participants (6). Other participants' motivations included "wanting a challenge" (17) as well as the enjoyment from "tackling a challenge" (15), friendship (17) as well as the knowledge that one is making progress towards becoming her best self (7) are also motivators that enhanced their commitment. As Participant 10 described, "for me its growth, I want to push myself to do something more than I could do yesterday. It's incremental, I always want to move forward."

Moreover, all of the participants expressed CrossFit improving their mood in dramatic ways (17). Participants find it easier to remain committed to adopting CrossFit as part of their lifestyle when they continually experience an improved mood after attending a session. As expressed by Participant 9, "for the most part, I'm always really happy after [CrossFit]" or as participant 7 stated, "I'm always happy to have gone!" For participant 6, it was the improved mood that she knows she is going to experience that gets her to the gym:

- You know whenever there are high stress levels or time issues, because you're tired, you don't want to go. I know that I'm going to feel better after I go, so just the knowledge of this is important, it's going to make you feel better in the long run and that motivates me to get there.

Social Connection and Community

All participants expressed a strong commitment to CrossFit as well as their CrossFit "families" and friends. Some participants expressed knowing that others were expecting to see them at the gym (13) and looking forward to time with "CrossFit friends and family" (11) as a primary motivation to continuing CrossFit. Participants were asked specific questions related to the social and cultural factors related to CrossFit and the connection and sense of community that the participants receive from their participation in CrossFit cannot be understated. For example, participants think of themselves as having a community and support system through CrossFit (17). As expressed by participant 12, "we are a family. We get together for game night on Friday nights about once or twice a month...we get together and bring our family members and we have Paleo potlucks, we play card games and board games. We spend time with each other outside of the box." While the participants are aware that outsiders may call CrossFit "cultish", the participants were thankful for their extended support system. Not only may CrossFitters be "family" with one another, they are also extremely cohesive in their particular groups:

- I think the fact that I was able to do it through my pregnancy and I had so much encouragement. I mean everyone there was just so proud of me to keep going and kept encouraging me to keep going. Since then I've been the point person for everyone that becomes pregnant at the box. They come talk to me about what they should and shouldn't be doing and get them motivated to get them back there. The fact that I was back

after six weeks after giving birth to her [participant's daughter] and I felt great and I was able to keep moving up in my weight and things are completely back to normal now! So, I think that, that was one big thing!
(Participant 6)

The social and positive environment (17) of CrossFit was central to all participants' experiences and an aspect they express deep gratitude for as described in the following statement made by participant 17, "it really is a second family...you really do adopt a second family and it's so awesome. It's really such an encouraging uplifting environment. I love it."

Moreover, for some participants (5), the social aspect of CrossFit was just as or even more important than the health and fitness benefits as expressed by participant 16, "I enjoy the workouts, but at the end of the day it is the people who are there and how supportive everybody is for each other."

Empowerment and Transformation

Participants expressed feeling empowered and changed by their CrossFit experience. Many of these feelings came from answers related to psychological factors as well as social and cultural factors. Before beginning CrossFit, all participants (17) mentioned they were not as physically fit as they were at the time of the interview. Interestingly, though, most participants (13) "thought" they were in good shape prior to starting CrossFit. Hence, participants experienced a change in their perspective regarding not only their fitness level, but also their exercise and nutritional routine during the adoption of CrossFit. Participant 3 highlighted:

- It's definitely not easy but after a while I fell in love with it and it's something that changed not only my exercise and how I view exercise, but also changed the way I eat and how I think about exercise.

Participants expressed eating healthier (17) and most followed some form of the Paleo diet (12) once committing to CrossFit.

Interestingly, participants not only reported changes in their physiques through an increase in lean body mass and a decrease in fat mass (17), they also experienced a change in their energy levels (17) as well as an increase in motivation and in other aspects of their lives (13). Participants (13) mentioned feeling mentally stronger to accomplish any challenge that life presented them as reflected by participant's 9 comments:

- "An awesome thing about my CrossFit journey is it not only made me stronger physically, it has also made me stronger mentally. And you know, that's the awesome thing about the journey; it never really ends because there is always more you could do, there is always more to strive for."

Some participants (7) achieved a renewed sense of pride and love for themselves they had not experienced prior to becoming a CrossFitter. Participant 17 mentioned:

- "I think that's the biggest thing I would want to drive home, is that it's a great thing to achieve but it's even better to want to take care of yourself and to love yourself and just love and be proud of the work that you do and let that carry over into other aspects of your life."

In conclusion, according to the participants, being a CrossFitter means empowering and transforming oneself with a community of people through a continual commitment to overcome the challenge that CrossFit presents to individuals. This is best revealed through the following quote from participant 9:

- I think being a CrossFitter means that you're willing to push yourself, you're willing to go outside of your comfort zone, you're willing to try things that you never thought you would see yourself doing. You're willing to do all of these things in order to get yourself better and you kind of accept that you're going to be vulnerable at times, there are going to be days that are going to be really hard that you're going to struggle through and be frustrating, but you're still willing to put yourself out there and it's being a part of a community. The really awesome thing about CrossFit is that even on those days where you know you don't seem to do as well as

you should have, or you're frustrated the whole time, you are still going to have the support of the people around you!

DISCUSSION

The present study explored the factors that encouraged individuals with more than three months of CrossFit experience to adopt this exercise program. Moreover, results support the psychological motivational theory, Self-Determination Theory, posited by Ryan and Deci (2000, 2002). SDT postulates individuals possess three essential psychological needs, which when fulfilled encourage self-determination and thus, more satisfying lives and the possibility of developing persistence and achievement in the activity. The three needs hypothesized by SDT include competence, autonomy and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000, 2002). Competence involves the feeling or perception that one is able to complete a task effectively; autonomy is the belief that participation in an action is elected freely; and lastly, relatedness involves a sense of belongingness to others (Ryan & Deci, 2000, 2002).

Results suggest that adopting a CrossFit based training program is an active and multifaceted process that involves participants accepting and overcoming physical and mental challenges while simultaneously committing to long-term goals. Throughout this process, participants experienced all of the psychological needs postulated by SDT (Deci & Ryan, 1985; Deci & Ryan, 1987, 2008; Ryan & Deci, 2000, 2002) by being part of a supportive community (relatedness), which in turn helped facilitate feelings of self-empowerment (autonomy) and increased self-efficacy and transformation (competence). While the higher order themes are distinct, the themes are interrelated. For example, accepting the difficulty of the "Workout Of the Day" (WOD) served to reinforce participants' commitment to their CrossFit program.

The results of the present study appear to be consistent with prior physical activity adoption research. For example, the major theme of Accepting and Overcoming Challenge is congruent with research suggesting that one's ability to cope with barriers predicts self-efficacy, which in turn predicts vigorous physical activity participation (Gyurcsik, Bray, & Brittain, 2004). Accepting and Overcoming Challenge also supports SDTs (Deci & Ryan, 2008) psychological need of competence. In addition, previous research supports the relationship between self-efficacy and psychological, emotional, and behavioral components of exercise (Lox et al., 2014; McAuley & Blissmer, 2000). As they became more familiar with and noticed improvements in their CrossFit WODs, participants (17) began to overcome feelings of self-doubt, and subsequently their self-efficacy improved. This familiarity with the training and improved self-efficacy provided participants a sense of perceived control over their exercise behavior, which is theorized to influence behavior directly when perceptions of control reflect actual control (Ajzen). The participants in the present study also discussed having high levels of the Master Approach (i.e., focused on achieving intrapersonal and task-based competence) corroborating evidence found by Partridge et al., (2014) on CrossFit participants who had been members for less than 6 months. Lastly, the current findings also supports those of Fisher et al., (2016) who found that Crossfitters were motivated by challenge.

A review conducted by Downs and Hausenblas, (2005) demonstrated that perceived behavioral control has a large effect on one's intention to engage in an activity as well as a moderate effect on behavior directly. Ultimately, it appears that CrossFit training facilitates perceptions of perceived behavior control by allowing participants to self-select their personal intensity level and to modify exercises based on their personal competence or skill level. Here again, participants in the present study revealed that CrossFit training meets the psychological needs of its members by providing individuals with autonomy (Deci & Ryan, 1987).

Additionally, the present study also provides insights into the nuances of CrossFit training. For example, participants were quick to draw stark comparisons between their current level of training and previous exercise routines. Many participants stated they felt relatively fit until they did their first ever WOD and that CrossFit was a "shock to the system." Participants felt that engaging in CrossFit on a regular basis had completely altered their personal perceptions regarding their own fitness and physical competency levels. In turn, these perceptions had altered many participants' individual goals and influenced their increased commitment to not only the training, but also their overall

health. However, these findings contradict those of Köteles et al., (2016) who found that perceptions of body competence were not altered by the duration and frequency of CrossFit participation.

The major theme of Commitment highlights the amount of time, dedication, and personal sacrifice needed to be a CrossFit participant. Commitment in the exercise realm has been conceptualized to reflect a pledge or obligation towards adherence (Corbin, Nielsen, Borsdorf, & Laurie, 1987; Martin & Hausenblas, 1998). The participants in the present study stated that their motivation to commit to CrossFit came from a number of sources. For example, they were committed because they enjoyed attending, felt supported by their fellow Crossfitters, had invested a significant amount of money to join, and spoke of benefits compared to other fitness modalities.

In regards to the relationship between commitment and exercise behavior, findings from the present study are consistent with previous research. Wilson and colleagues (2004) developed the Exercise Commitment Scale (ECS) and found commitment to be a multidimensional construct with five determinants: satisfaction, involvement alternatives, personal investment, social support, and social constraints. Furthermore, the ECS also has two dimensions 'want to' and 'have to' of exercise commitment. Participants in the present study talked about their satisfaction with the program and its results. Many mentioned they could not see themselves going back to a 'regular' gym now that they had been to a CrossFit "box". Additionally, participants in the study spoke about how the monthly fees meant they felt financially committed to the program [monthly membership fees vary throughout the country, but are usually higher than a "regular gym" membership]. Fitness professionals in alternative settings may reflect upon the findings of the present study by recognizing that lowering membership and/ or participation fees does not necessarily equate to increased commitment and adherence. Rather, because members have sacrificed and committed financially for their exercise participation, members may be more inclined to commit to the exercise program.

Lastly, and perhaps most importantly, participants talked about the value of social support and how they felt a connection and commitment to attend on a regular basis in order to support other Crossfitters as well as to not let anyone down. While participants discussed moments when they felt unmotivated to attend, their stated commitment seemed to be 'wanting to' as opposed to 'having to' go to the workout. Taken together, these findings suggest that developing commitment is an essential component of adopting exercise behaviors. Exercise practitioners may want to pay particular attention to the dimensions of personal investment and satisfaction as these have been found to be the strongest predictors of commitment (Carpenter, Scanlan, Simons, & Lobel, 1993; Wilson et al., 2004).

In addition, in terms of commitment and motivation to not only attend but continue through a workout, one commonly utilized source of motivation in CrossFit boxes is the use of music; however, previous research conducted with Crossfitters found evidence that "work output decreased when music was played" (Brupbacher et al., 2014) during CrossFit WODs. Since participants in the current study did not bring forth music as a motivational quality for their participation, practitioners and CrossFit coaches could benefit from examining more closely the use of music as well as its impact on Crossfitters' performance and enjoyment during WODs. As Brupbacher et al. (Brupbacher et al., 2014) suggest, the chosen music may not be the preferences of the majority of Crossfitters; thus, practitioners and coaches should consider this when creating playlists.

The major theme of Social Connection and Community is congruent with previous research, which suggests that exercisers who are part of a group are more likely to adhere than those who exercise alone (Burke, Carron, Eys, Ntoumanis, & A.Estabrooks, 2006; Carron, Hausenblas, & Mack, 1996). A sense of exclusivity to their community was a noted aspect for these participants and has been discussed in previous literature (Belger, 2012; Dawson, 2015). Participants in this study viewed fellow Crossfitters, regardless of ability level, age, or gender as one of their own. While outsiders may view CrossFit as "cultish", participants in this study valued and appreciated other Crossfitters for being willing to endure this high-intensity training modality. All of the participants shared a basic understanding that taking part in CrossFit is difficult, regardless of whether one is entering CrossFit competitions or is inexperienced. Therefore, anyone willing to "give it their best" was a welcomed member to their community. Moreover, being part of the community extended beyond the WODs for these participants. Many engaged in social

gatherings outside of training with fellow Crossfitters and had developed strong friendships.

Another important finding was the value participants placed upon the CrossFit coaches. The CrossFit coaches are primarily responsible for ensuring safety and facilitating performance of their clients. Specific duties often include designing the WOD, teaching and correcting technical form, and providing encouragement during performance. Participants leaned on their coaches for technical lifting advice, information on nutrition, motivation, emotional support, and friendship. These findings support previous research that suggests exercise leaders can have a significant impact upon participants' self-efficacy (Elston & Ginis, 2004) and attendance (Jeffery, Wing, Thorson, & Burton, 1998). Overall, these findings suggest that Crossfitters and their coaches share strong bonds and an appreciation for the modality, as well as motivate each other, which is unique to their community.

The major themes of Empowerment and Transformation are also congruent with research suggesting that exercise can improve self-efficacy, perceptions of personal control, perceived competence, and overall improved mental health (Lox et al., 2014). Developing such positive personal perceptions can facilitate empowerment at a personal level (Conger & Kanungo, 1988; Rappaport, 1984; Simmons & Parsons, 1983; Staples, 1990). Together, empowerment can be developed through the acquisition of skills and self-perceptions that encourage individuals to take responsibility for daily activities (Gutierrez, 1990; Kopp, 1989; McWhirter, 1991; Rappaport, 1984). Participants clearly felt that CrossFit had transformed their lives for the better, not just physically but also psychologically. They expressed feelings of pride, confidence, and a more positive outlook with which to approach life's challenges. Moreover, aligned with SDT (Deci & Ryan, 2008) participants perceived they were competent to overcome obstacles they would face not only during the workout but also in their day-to-day lives.

The term "transformation" can be used to discuss the restructuring of goals and commitments, as well as developing an interest in new activities (Kleiber, Hutchinson, & Williams, 2002; Tedeschi, Park, & Calhoun, 1998). The majority of the participants discussed how CrossFit had altered their physical activity goals as well as making them more goal-orientated in their general life. Participants spoke passionately about their training and were motivated to encourage others to try. While this transformation was mainly framed in a positive way, some participants did express they now felt disconnected with friends and family who did not support or understand their passion for CrossFit. Ultimately, many articulated that CrossFit "is not for everyone", but felt CrossFit receives too much negative publicity from those who are uninformed about the training modality.

While the present findings offer the first in-depth exploration of adoption factors concerned with CrossFit participants, they are limited. Although a saturation point was achieved and despite a diverse sample (e.g., age, gender, ability, and experience level), the themes that emerged are only representative of the current participants and not necessarily those of all CrossFit participants. For example, a higher representation of females may have influenced the results. As with all interview techniques, while participants were encouraged to speak freely about their CrossFit experience, they may not have shared certain aspects of their experience for various reasons. Lastly, as the participants were currently active in CrossFit training, their answers tended to be extremely positive and therefore might not offer a balanced perspective on this high-intensity training modality. Despite these limitations, the results of the present study complement and extend upon previous research on exercise adoption. In particular, overcoming initial challenges, developing a strong sense of commitment, the central role of community, and empowerment and transformation at a personal level all represent important extensions to prior exercise research.

CONCLUSIONS

For exercisers and practitioners in the fitness field, the results of the present study offer several insights for those wishing to increase exercise adoption. First, people who adopt CrossFit as a training modality go through a difficult adjustment period where they must overcome self-doubt, perceived barriers, and previous perceptions regarding fitness. However, if participants successfully navigate this period without dropping out, they often gain self-efficacy, a sense of control over their exercise habits, as well as a new positive attitude about their physical and mental capabilities. To help participants overcome these challenges, CrossFit coaches play a critical role in providing opportunities for success, providing positive and instructional feedback, as well as allowing participants to choose

their personal intensity preference. Second, participants must understand that consistently attending a CrossFit box requires a level of commitment, which may involve several sacrifices (e.g., time with significant others, money). Third, there is a strong sense of community within CrossFit and new participants are expected to “buy-into” this culture. Crossfitters are expected to support and encourage each other and attend on a regular basis. Coaches and trainers can facilitate the development of this community by providing opportunities for social interaction. Lastly, coaches must communicate effectively with participants to understand their motives and goals for joining. Through a shared sense of purpose CrossFit training has the potential to transform and influence lives in a positive way.

In regards to future research, the current findings could be used to develop a valid quantitative psychometric tool, which specifically addresses assessment of self-efficacy and perceived behavioral control in CrossFit settings. Additionally, researchers could conduct longitudinal studies, which might examine physiological and psychological changes resulting from CrossFit training. Lastly, researchers must also investigate the reasons why people drop out of programs such as CrossFit, as well as similar programs.

APPLICATIONS IN SPORT

Our findings suggest that adopting a CrossFit training program is an active and multifaceted process that involves participants accepting and overcoming physical and mental challenges while, simultaneously committing to long-term goals, which may alter personal perceptions about fitness and overall health for participants. In addition, it is obvious that participants committed to CrossFit training enjoy attending, felt supported by their fellow Crossfitters, had invested a significant amount of money to join, and experienced greater benefits compared to other fitness modalities. Lastly, the participants interviewed shared a basic understanding that although CrossFit training was difficult, anyone willing to “give it their best” was a welcomed member to the community.

REFERENCES

1. Aaltonen, S., Rottensteiner, M., Kaprio, J., & Kujala, U.M. (2014). Motives for physical activity among active and inactive persons in their mid-30s. *Scandinavian journal of medicine & science in sports*, 24(4), 727-735.
2. Ajzen, I. (1988). *Attitudes, personality, and behavior*. Homewood, IL, US: Dorsey Press.
3. American College of Sports Medicine. (2013). *Acsm’s guidelines for exercise testing and prescription* (L. Pescatello Ed. 9th ed.): Lippincott Williams & Wilkins.
4. Barriball, K.L., & While, A. (1994). Collecting data using a semi-structured interview: A discussion paper. *J Adv Nurs*, 19, 328-335.
5. Belger, A.W. (2012). *The power of community: Crossfit and the force of human connection*: Victory Belt Publishing.
6. Brupbacher, G., Harder, J., Faude, O., Zahner, L., & Donath, L. (2014). Music in crossfit —influence on performance, physiological, and psychological parameters. *Sports health*, 2(1), 14-23.
7. Buckworth, J. (2000). Exercise determinants and interventions. *Int J Sport Psychol*, 31(2), 305-320.
8. Buckworth, J., Dishman, R.K., O’Connor, P.J., & Tomporowski, P.D. (2013). *Exercise psychology* (2nd ed.): Human kinetics.
9. Burke, S.M., Carron, A.V., Eys, M.A., Ntoumanis, N., & A.Estabrooks, P. (2006). Group versus individual approach? A meta-analysis of the effectiveness of interventions to promote physical activity. *Sport and Exercise Psychology Review*, 2(1), 19-35.
10. Carpenter, P.J., Scanlan, T.K., Simons, J.P., & Lobel, M. (1993). A test of the sport commitment model using structural equation modeling. *J Sport Exercise Psy*, 15(2), 119-133.
11. Carron, A.V., Hausenblas, H.A., & Mack, D. (1996). Social influence and exercise: A meta-analysis. *J Sport Exercise Psy*, 18(1), 1-16.
12. Conger, J.A., & Kanungo, R.N. (1988). The empowerment process: Integrating theory and practice. *Academy of management review*, 13(3), 471-482.
13. Conroy, D.E., Elliot, A.J., & Hofer, S.M. (2003). A 2 x 2 achievement goals questionnaire for sport: Evidence for factorial invariance, temporal stability, and external validity. *Journal of Sport & Exercise Psychology*, 25(4), 456-476.
14. Corbin, C., Nielsen, A., Borsdorf, L., & Laurie, D. (1987). Commitment to physical activity. *Int J Sport Psychol*, 18(3), 215-222.

15. Cornwall, W. (2013). Crossing swords with crossfit. Outside Magazine Online. <http://www.outsideonline.com/fitness/strength-and-power-training/Crossing-Swords-with-CrossFit.html>
16. Cote, J., Salmela, J.H., Baria, A., & Russel, S.J. (1993). Organizing and interpreting unstructured qualitative data. *Sport Psychol.*, 7(2), 127-137.
17. CrossFit Inc. (2017). Crossfit affiliate map. Retrieved March 2, 2017, 2017, Retrieved from <http://map.crossfit.com/>
18. Dawson, M.C. (2015). Crossfit fitness cult or reinventive institution? *International review for the sociology of sport*, 1012690215591793.
19. Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Springer US.
20. Deci, E.L., & Ryan, R.M. (1987). The support of autonomy and the control of behavior. *J Pers Soc Psychol*, 53(6), 1024.
21. Deci, E.L., & Ryan, R.M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Can Psychol*, 49(3), 182.
22. Dishman, R.K., Sallis, J.F., & Orenstein, D.R. (1985). The determinants of physical activity and exercise. *Public Health Reports*, 100(2), 158-171.
23. Downs, D.S., & Hausenblas, H.A. (2005). The theories of reasoned action and planned behavior applied to exercise: A meta-analytic update. *Journal of Physical Activity and Health*, 2(1), 76-97.
24. Eather, N., Morgan, P.J., & Lubans, D.R. (2016). Improving health-related fitness in adolescents: The crossfit teens™ randomised controlled trial. *Journal of Sports Sciences*, 34(3), 209-223.
25. Elston, T., & Ginis, K. (2004). The effects of self-set versus assigned goals on exercisers' self-efficacy for an unfamiliar task. *J Sport Exercise Psy*, 26(3), 500-504.
26. Fisher, J., Sales, A., Carlson, L., & Steele, J. (2016). A comparison of the motivational factors between crossfit participants and other resistance exercise modalities: A pilot study. *The Journal of sports medicine and physical fitness*.
27. Glassman, G. (2007). Understanding crossfit. *CrossFit Journal*, 56, 1-2.
28. Gorden, R.L. (1975). *Interviewing: Strategy, techniques and tactics*. Illinois: Dorsey Press.
29. Gregory, S. (2014, January 25). Lift, squat, repeat: Inside the crossfit cult. *TIME*, 40-44.
30. Gutierrez, L.M. (1990). Working with women of color: An empowerment perspective. *Soc Work*, 35(2), 149-153.
31. Gyurcsik, N.C., Bray, S.R., & Brittain, D.R. (2004). Coping with barriers to vigorous physical activity during transition to university. *Fam Community Health*, 27(2), 130-142.
32. Hak, P.T., Hodzovic, E., & Hickey, B. (2013). The nature and prevalence of injury during crossfit training. *J Strength Cond Res.*, Published Ahead of Print.
33. Helm, B. (2014, Mar 26). Too much pain for crossfit gain? *Men's Journal*, 23, 47-48.
34. Herz, J.C. (2014). *Learning to breathe fire: The rise of crossfit and the primal future of fitness*. New York, NY: Crown Archetype.
35. Jeffery, R.W., Wing, R.R., Thorson, C., & Burton, L.R. (1998). Use of personal trainers and financial incentives to increase exercise in a behavioral weight-loss program. *J Consult Clin Psych*, 66(5), 777.
36. Kleiber, D.A., Hutchinson, S.L., & Williams, R. (2002). Leisure as a resource in transcending negative life events: Self-protection, self-restoration, and personal transformation. *Leisure Sciences*, 24(2), 219-235.
37. Kopp, J. (1989). Self-observation: An empowerment strategy in assessment. *Social Casework*.
38. Köteles, F., Kollsete, M., & Kollsete, H. (2016). Psychological concomitants of crossfit training: Does more exercise really make your everyday psychological functioning better? *Kineziologija*, 48(1), 39-48.
39. Lox, C.L., Ginis, K.A.M., & Petruzzello, S.J. (2014). *The psychology of exercise: Integrating theory and practice* (4th ed.): Holcomb Hathaway.
40. Martin, K.A., & Hausenblas, H.A. (1998). Psychological commitment to exercise and eating disorder symptomatology among female aerobic instructors. *Sport Psychol.*, 12, 180-190.
41. McAuley, E., & Blissmer, B. (2000). Self-efficacy determinants and consequences of physical activity. *Exerc Sport Sci Rev.*, 28(2), 85-88.
42. McWhirter, E.H. (1991). Empowerment in counseling. *J Couns Dev*, 69(3), 222-227.

43. Murphy, T.J. (2012). *Inside the box: How crossfit® shredded the rules, stripped down the gym and rebuilt my body* (1 ed.). Boulder, CO: Velopress.
44. Parfitt, G., Rose, E., & Burgess, W. (2006). The psychological and physiological responses of sedentary individuals to prescribed and preferred intensity exercise. *Br J Health Psychol.*, 11(Pt 1), 39-53.
45. Partridge, J.A., Knapp, B.A., & Massengale, B.D. (2014). An investigation of motivational variables in crossfit facilities. *The Journal of Strength & Conditioning Research*, 28(6), 1714-1721.
46. Patton, M.Q. (1990). *Qualitative evaluation and research methods*. Newbury Park, California: Sage.
47. Perri, M.G., Anton, S.D., Durning, P.E., Ketterson, T.U., Sydeman, S.J., Berlant, N.E., . . . Martin, A.D. (2002). Adherence to exercise prescriptions: Effects of prescribing moderate versus higher levels of intensity and frequency. *Health Psychology*, 21(5), 452.
48. Rappaport, J. (1984). Studies in empowerment: Introduction to the issue. *Prevention in Human Services*, 3(2-3), 1-7.
49. Ryan, R., Frederick, C., Lipes, D., Rubio, N., & Sheldon, K. (1997). Intrinsic motivation and exercise adherence. *Int J Sport Psychol*, 28(4), 335-354.
50. Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.
51. Ryan, R.M., & Deci, E.L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E.L. Deci & R.M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: The University of Rochester Press.
52. Sallis, J.F., Haskell, W.L., Fortmann, S.P., Vranizan, K.M., Taylor, C.B., & Solomon, D.S. (1986). Predictors of adoption and maintenance of physical activity in a community sample. *Prev Med*, 15(4), 331-341.
53. Sibley, B.A. (2012). Using sport education to implement a crossfit unit. *Journal of Physical Education, Recreation & Dance*, 83(8), 42-48.
54. Simmons, C.H., & Parsons, R.J. (1983). Developing internality and perceived competence: The empowerment of adolescent girls. *Adolescence*.
55. Smith, M.M., Sommer, A.J., Starkoff, B.E., & Devor, S.T. (2013). Crossfit-based high-intensity power training improves maximal aerobic fitness and body composition. *J Strength Cond Res.*, 27(11), 3159-3172.
56. Staples, L.H. (1990). Powerful ideas about empowerment. *Admin Soc Work*, 14(2), 29-42.
57. Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*: Sage Publications, Inc.
58. Tedeschi, R.G., Park, C.L., & Calhoun, L.G. (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*: Routledge.
59. Thomas, S.P., & Pollio, H.R. (2002). *Listening to patients: A phenomenological approach to nursing research and practice*: Springer Publishing.
60. Trost, S.G., Owen, N., Bauman, A.E., Sallis, J.F., & Brown, W. (2002). Correlates of adults' participation in physical activity: Review and update. *Med Sci Sports Exerc*, 34(12), 1996-2001.
61. Weisenthal, B.M., Beck, C.A., Maloney, M.D., DeHaven, K.E., & Giordano, B.D. (2014). Injury rate and patterns among crossfit athletes. *Orthop J Sports Med*, 2(4).
62. Wilson, P.M., Rodgers, W.M., Carpenter, P.J., Hall, C., Hardy, J., & Fraser, S.N. (2004). The relationship between commitment and exercise behavior. *Psychol Sport Exerc*, 5(4), 405-421.