THE RELATIONSHIP BETWEEN ANXIETY, RESILIENCE, AND LIFE SATISFACTION WITHIN THE CROSSFIT TRAINING METHODOLOGY

By

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ABSTRACT

A question asked commonly is if exercise has any effect on our Mental Health. This paper has tried to answer the question differently. Taking into consideration the psychological factors of Anxiety, Resilience, and Life Satisfaction because according to the author these are the main areas of Mental Health impacted in everyday life.

The exercise routine in this research was the CrossFit Training methodology. 60+ participants who have been following this exercise regime in a group setting for at least 6+ months were administered a mixed test of the Becks Anxiety Inventory (BAI), Brief Resilience Scale (BRS), and The Satisfaction with Life Scale (SLWS) through a google form. All participants were between the ages of 18 and 40 and met all the details for the inclusion criteria.

The result of the test was that participants who followed the CrossFit Training methodology in a group setting. This paper has tried to measure the relationship between each of the psychological factors with the CrossFit Training Methodology. The Mean Anxiety was 12.58 (Low), Mean Resilience was 18.44 (Normal Resilience), Mean Life Satisfaction was 11.69 (Dissatisfied). The statistics (correlation coefficient) between each of the factors by Speaman's Rho is as follows; Anxiety & Resilience was -.469, Anxiety and Life Satisfaction was -.315 and Resilience and Life Satisfaction was .205

The findings of this paper can be used for developing training plans considering the Mental Health effects of each of these factors on each other.

INTRODUCTION

1.1 OVERVIEW

Exercise. Specifically, CrossFit is an exceptionally good means to stay fit Physically. It makes you do tasks that you would do in your normal routine, but at "High Intensity", and hence, the everyday tasks feel much easier than they usually used to. That is the beauty of the CrossFit Methodology. CrossFit is not just High-Intensity exercise though. It is much more than that. CrossFit combines Functional Movements (Movements which we do in our day-to-day life), makes you do them at higher Intensity (High Intensity is relative to different Individuals), and the movements, workout times, and intensity keep Varying (Life is random and you do not know what situation you might face tomorrow) – and in this way, prepares an Individual for LIFE!

Through this research, the researcher wants to understand the relation this Training Regimen has with different psychological factors – namely, *Anxiety, Resilience, and Life Satisfaction.*

Therefore, there is a lack of awareness in the general population regarding the effects of exercise, specifically, CrossFit on Mental Health.

The main aim of the research is to see the relationship between Training in CrossFit and Psychological Factors like Anxiety, Resilience, and Life Satisfaction.

The Sample of the study will consist of 50 participants (25 males and 25 females) who are between the age of 18 – 40, Currently Working, Not Married, and have been following the CrossFit Training Methodology for at least 3 days a week in the past 6 months.

The following Tools will be used for Data Collection.

- **The Satisfaction with Life Scale (SWL)**

- **Brief Resilience Scale (BRS)**

- **Becks Anxiety Inventory (BAI)**

1.2 ANXIETY

1.2.1 Definition

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure.

People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling, dizziness, or a rapid heartbeat.

Anxiety is your body's natural response to stress. It is a feeling of fear or apprehension about what is to come. On the first day of school, going to a job interview, or giving a speech may cause most people to feel fearful and nervous.

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1.2.2 Concept

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1.2.3 Theories

1.2.3.1 Psychodynamic theory of Anxiety

The psychodynamic theory has explained anxiety as a conflict between the id and ego. Aggressive and impulsive drives may be experienced as unacceptable resulting in repression. These repressed drives may break through repression, producing automatic anxiety.

1.2.3.2 Cognitive Theory of Anxiety

In the 1950s, a psychologist named Albert Ellis, and a psychiatrist named Aaron Beck, independently developed two remarkably similar theories. Both theories resulted in effective forms of cognitive therapy. These therapies continue to be widely practiced today. While behavioral learning theory emphasizes the role of the environment, the cognitive theory emphasizes the key role of the mind's cognition in determining behavior. These cognitions include a person's thoughts, feelings, beliefs, and perceptions.

1.2.4 Types

There are various types of anxiety. Existential anxiety can occur when a person faces angst, an existential crisis, or nihilistic feelings. People can also face mathematical anxiety, somatic anxiety, stage fright, or test anxiety. Social anxiety refers to a fear of rejection and negative evaluation by other people.

1.2.4.1 Existential

The philosopher Søren Kierkegaard, in The Concept of Anxiety (1844), described anxiety or dread as associated with the "dizziness of freedom" and suggested the possibility of positive resolution of anxiety through the self-conscious exercise of responsibility and choosing. In Art and Artist (1932), the psychologist Otto Rank wrote that the psychological trauma of birth was the pre-eminent human symbol of existential anxiety and encompasses the creative person's simultaneous fear of – and desire for – separation, individuation, and differentiation.

The theologian Paul Tillich characterized existential anxiety as "the state in which a being is

aware of its possible nonbeing" and he listed three categories for the nonbeing and resulting anxiety: ontic (fate and death), moral (guilt and condemnation), and spiritual (emptiness and meaninglessness). According to Tillich, the last of these three types of existential anxiety, i.e., spiritual anxiety, is predominant in modern times while the others were predominant in earlier periods. Tillich argues that this anxiety can be accepted as part of the human condition, or it can be resisted but with negative consequences. In its pathological form, spiritual anxiety may tend to "drive the person toward the creation of certitude in systems of meaning which are supported by tradition and authority" even though such "undoubted certitude is not built on the rock of reality".

According to Viktor Frankl, the author of Man's Search for Meaning, when a person is faced with extreme mortal dangers, the most basic of all human wishes is to find a meaning in life to combat the "trauma of nonbeing" as death is near.

Depending on the source of the threat, psychoanalytic theory distinguishes the following types of anxiety:

- Realistic
- Neurotic
- Moral

1.2.4.2 Test and performance

According to Yerkes-Dodson law, an optimal level of arousal is necessary to best complete a task such as an exam, performance, or competitive event. However, when the anxiety or level of arousal exceeds that optimum, the result is a decline in performance.

Test anxiety is the uneasiness, apprehension, or nervousness felt by students who have a fear

of failing an exam. Students who have test anxiety may experience any of the following: the association of grades with personal worth; fear of embarrassment by a teacher; fear of alienation from parents or friends; time pressures; or feeling a loss of control. Sweating, dizziness, headaches, racing heartbeats, nausea, fidgeting, uncontrollable crying or laughing, and drumming on a desk are all common. Because test anxiety hinges on fear of negative evaluation, debate exists as to whether test anxiety is itself a unique anxiety disorder or whether it is a specific type of social phobia. The DSM-IV classifies test anxiety as a type of social phobia.

While the term "test anxiety" refers specifically to students, many workers share the same experience about their career or profession. The fear of failing at a task and being negatively evaluated for failure can have a similarly negative effect on the adult. Management of test anxiety focuses on achieving relaxation and developing mechanisms to manage anxiety.

1.2.4.3 Stranger, social, and intergroup anxiety

Humans generally require social acceptance and thus sometimes dread the disapproval of others. Apprehension of being judged by others may cause anxiety in social environments.

Anxiety during social interactions, particularly between strangers, is common among young people. It may persist into adulthood and become social anxiety or social phobia. "Stranger anxiety" in small children is not considered a phobia. In adults, an excessive fear of other people is not a developmentally common stage; it is called social anxiety. According to Cutting, social phobics do not fear the crowd but the fact that they may be judged negatively.

Social anxiety varies in degree and severity. For some people, it is characterized by experiencing discomfort or awkwardness during physical social contact (e.g., embracing, shaking hands, etc.), while in other cases it can lead to a fear of interacting with unfamiliar

people altogether. Those suffering from this condition may restrict their lifestyles to accommodate the anxiety, minimizing social interaction whenever possible. Social anxiety also forms a core aspect of certain personality disorders, including avoidant personality disorders.

To the extent that a person is fearful of social encounters with unfamiliar others, some people may experience anxiety, particularly during interactions with outgroup members, or people who share different group memberships (i.e., by race, ethnicity, class, gender, etc.). Depending on the nature of the antecedent relations, cognitions, and situational factors, intergroup contact may be stressful and lead to feelings of anxiety. This apprehension or fear of contact with outgroup members is often called interracial or intergroup anxiety.

As is the case with the more generalized forms of social anxiety, intergroup anxiety has behavioral, cognitive, and affective effects. For instance, increases in schematic processing and simplified information processing can occur when anxiety is high. Indeed, such is consistent with related work on attentional bias in implicit memory. Additionally, recent research has found that implicit racial evaluations (i.e. automatic prejudiced attitudes) can be amplified during intergroup interaction. Negative experiences have been illustrated in producing not only negative expectations, but also avoidant, or antagonistic, behavior such as hostility. Furthermore, when compared to anxiety levels and cognitive effort (e.g Impression management and self-presentation) in intergroup contexts, levels and depletion of resources may be exacerbated in the intergroup situation.

1.2.4.4 Trait

Anxiety can be either a short-term "state" or a long-term personality "trait." Trait anxiety reflects a stable tendency across the lifespan of responding with an acute, state of anxiety in the anticipation of threatening situations (whether they are deemed threatening or not). A

meta-analysis showed that a high level of neuroticism is a risk factor for the development of anxiety symptoms and disorders. Such anxiety may be conscious or unconscious.

Personality can also be a trait leading to anxiety and depression. Through experience, many find it difficult to collect themselves due to their nature.

1.2.4.5 Choice or Decision

Anxiety induced by the need to choose between similar options is increasingly being recognized as a problem for individuals and organizations. In 2004, Capgemini wrote: "Today we're all faced with greater choice, more competition, and less time to consider our options or seek out the right advice."

In a decision context, unpredictability or uncertainty may trigger emotional responses in anxious individuals that systematically alter decision-making. There are primarily two forms of this anxiety type. The first form refers to a choice in which there are multiple potential outcomes with known or calculable probabilities. The second form refers to the uncertainty and ambiguity related to a decision context in which there are multiple possible outcomes with unknown probabilities.

1.2.4.6 Panic Disorder

Panic disorder may share symptoms of stress and anxiety, but it is quite different. Panic disorder is an anxiety disorder that occurs without any triggers. According to the U.S Department of Health and Human Services, this disorder can be distinguished by unexpected and repeated episodes of intense fear.[51] Someone who suffers from panic disorder will eventually develop constant fear of another attack and as this progresses it will begin to affect daily functioning and an individual's general quality of life. It is reported by the Cleveland Clinic that panic disorder affects 2 to 3 percent of adult Americans and can begin around the

time of the teenage and early adult years. Some symptoms include difficulty breathing, chest pain, dizziness, trembling or shaking, feeling faint, nausea, and fear that you are losing control or are about to die. Even though they suffer from these symptoms during an attack, the main symptom is the persistent fear of having future panic attacks.

1.2.4.7 Anxiety Disorder

Anxiety disorders are a group of mental disorders characterized by exaggerated feelings of anxiety and fear responses. Anxiety is a worry about future events

and fear is a reaction to current events. These feelings may cause physical symptoms, such as a fast heart rate and shakiness. There are several anxiety disorders: including generalized anxiety disorder, specific phobia, social anxiety disorder, separation anxiety disorder, agoraphobia, panic disorder, and selective mutism. The disorder differs in what results in the symptoms. People often have more than one anxiety disorder.

Anxiety disorders are caused by a complex combination of genetic and environmental factors. To be diagnosed, symptoms typically need to be present for at least six months, be more than would be expected for the situation, and decrease a person's ability to function in their daily lives. Other problems that may result in similar symptoms include hyperthyroidism, heart disease, caffeine, alcohol, or cannabis use, and withdrawal from certain drugs, among others.

Without treatment, anxiety disorders tend to remain. Treatment may include lifestyle changes, counseling, and medications. Counseling is typical of a type of cognitive behavioral therapy. Medications, such as antidepressants or beta blockers, may improve symptoms.

About 12% of people are affected by an anxiety disorder in a given year and between 5–30% are affected at some point in their life. They occur about twice as often in women than they do in men and generally begin before the age of 25. The most common are specific phobia

which affects nearly 12% and social anxiety disorder which affects 10% at some point in their life. They affect those between the ages of 15 and 35 the most and become less common after the age of 55. Rates appear to be higher in the United States and Europe.

1.2.4.8 Short- and long-term anxiety

Anxiety can be either a short-term "state" or a long-term "trait." Whereas trait anxiety represents worrying about future events, anxiety disorders are a group of mental disorders characterized by feelings of anxiety and fears.

1.3 RESILIENCE

1.3.1 Definition

Life may not come with a map, but everyone will experience twists and turns, from everyday challenges to traumatic events with more lasting impact, like the death of a loved one, a life-altering accident, or a serious illness. Each change affects people differently, bringing a unique flood of thoughts, strong emotions, and uncertainty. Yet people generally adapt well over time to life-changing situations and stressful situations—in part thanks to resilience.

Psychologists define **resilience** as the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress—such as family and relationship problems, serious health problems, or workplace and financial stressors. As much as resilience involves “bouncing back” from these difficult experiences, it can also involve profound personal growth.

While these adverse events, much like rough river waters, are certainly painful and difficult, they do not have to determine the outcome of your life. There are many aspects of your life you can control, modify, and grow with. That is the role of resilience. Becoming more resilient not only helps you get through difficult circumstances but also empowers you to

grow and even improve your life along the way.

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1.3.2 Concept

People face all kinds of adversity in life. There are personal crises, such as illness, loss of a loved one, abuse, bullying, job loss, and financial instability. There is the shared reality of tragic events in the news, such as terrorist attacks, mass shootings, natural disasters, and of course the COVID-19 pandemic. People must learn to cope with and work through incredibly challenging life experiences.

1.3.3 Theories

Resilience theory refers to the ideas surrounding how people are affected by and adapt to things like adversity, change, loss, and risk.

Being resilient does not mean that people don't experience stress, emotional upheaval, and suffering. Some people equate resilience with mental

toughness, but demonstrating resilience includes working through emotional pain and suffering.

Resilience isn't a fixed trait. Flexibility, adaptability, and perseverance can help people tap into their resilience by changing certain thoughts and behaviors. Research shows that students who believe that both intellectual abilities and social attributes can be developed show a lower stress response to adversity and improved performance.

- Gratitude
- Compassion

- Acceptance
- Meaning
- Forgiveness

Developing resilience is both complex and personal. It involves a combination of inner strengths and outer resources, and there isn't a universal formula for becoming more resilient. All people are different: While one person might develop symptoms of depression or anxiety following a traumatic event, another person might not report any symptoms at all.

A combination of factors contributes to building resilience, and there isn't a simple to-do list to work through adversity. In one longitudinal study, protective factors for adolescents at risk for depression, such as family cohesion, positive self-appraisals, and good interpersonal relations, were associated with resilient outcomes in young adulthood.

While individuals process trauma and adversity in different ways, certain protective factors help build resilience by improving coping skills and adaptability. These factors include:

- **Social Support** Research published in 2015 in the journal *Ecology and Society* showed that social systems that provide support in times of crisis or trauma support resilience in the individual. Social support can include immediate or extended family, community, friends, and organizations.
- **Realistic Planning** The ability to make and carry out realistic plans helps individuals play to their strengths and focus on achievable goals.
- **Self-Esteem** A positive sense of self and confidence in one's strengths can stave off feelings of helplessness when confronted with adversity.

- **Coping Skills** Coping and problem-solving skills help empower a person who must work through adversity and overcome hardship.
- **Communication Skills** Being able to communicate clearly and effectively helps people seek support, mobilize resources, and act.
- **Emotional Regulation** The capacity to manage potentially overwhelming emotions (or seek assistance to work through them) helps people maintain focus when overcoming a challenge.

1.3.4 Types

The word resilience is often used on its own to represent overall adaptability and coping, but it can be broken down into categories or types:

- Psychological resilience
- Emotional resilience
- Physical resilience
- Community resilience

1.3.4.2 Psychological resilience

Psychological resilience refers to the ability to mentally withstand or adapt to uncertainty, challenges, and adversity. It is sometimes referred to as “mental fortitude.”

People who exhibit psychological resilience develop coping strategies and capabilities that enable them to remain calm and focused during a crisis and move on without long-term negative consequences.

1.3.4.2 Emotional resilience

There are varying degrees of how well a person copes emotionally with stress and adversity. Some people are, by nature, sensitive to change. How a person responds to a situation can trigger a flood of emotions.

Emotionally resilient people understand what they are feeling and why. They tap into realistic optimism, even when dealing with a crisis, and are proactive in using both internal and external resources. As a result, they can manage stressors as well as their emotions in a healthy, positive way.

1.3.4.3 Physical resilience

Physical resilience refers to the body's ability to adapt to challenges, maintain stamina and strength, and recover quickly and efficiently. A person can function and recover when faced with illness, accidents, or other physical demands.

Research published in April 2016 in *The Journal of Gerontology* showed that physical resilience plays an important role in healthy aging, as people encounter medical issues and physical stressors.

Healthy lifestyle choices, building connections, making time to rest and recover, deep breathing, and engaging in enjoyable activities all play a role in building physical resilience.

1.3.4.4 Community resilience

Community resilience refers to the ability of groups of people to respond to and recover from adverse situations, such as natural disasters, acts of violence, economic hardship, and other challenges to their community.

Real-life examples of community resilience include New York City following the 9/11

terrorist attacks; Newtown, Connecticut, after the Sandy Hook Elementary School shooting; New Orleans following Hurricane Katrina; and the communities of Gilroy, California, El Paso, Texas, and Dayton, Ohio, in the wake of mass shootings.

As the United States grapples with the COVID-19 pandemic, our resilience in the face of this unprecedented public-health emergency is being tested as ever before.

1.4 LIFE SATISFACTION

1.4.1 Definition

Life Satisfaction is the extent to which a person finds life rich, meaningful, full, or of high quality. Numerous standardized measures have been developed to provide an index of a person's life satisfaction in comparison to various normative groups. Improved life satisfaction is often a goal of treatment, especially with older people.

American Psychologists Association (www.apa.org)

1.4.2 Concept

Life satisfaction (LS) is how people show their emotions, feelings (moods), and how they feel about their directions and options for the future. It is a measure of well-being assessed in terms of mood, satisfaction with relationships, achieved goals, self-concepts, and self-perceived ability to cope with one's daily life. Life satisfaction involves a favorable attitude towards one's life rather than an assessment of current feelings. Life satisfaction has been measured concerning economic standing, degree of education, experiences, and residence, among many other topics.

1.4.3 Theories

There are two main types of theories about life satisfaction:

1.4.3.1 Bottom-up theories: life satisfaction because of satisfaction in the many domains of life.

1.4.3.2 Top-down theories: life satisfaction as an influencer of domain-specific satisfaction (Heady, Veenhoven, & Wearing, 1991).

Bottom-up theories hold that we experience satisfaction in many domains of life, like work, relationships, family and friends, personal development, and health and fitness. Our satisfaction with our lives in these areas combines to create our overall life satisfaction.

On the other hand, top-down theories state that our overall life satisfaction influences (or even determines) our life satisfaction in many different domains. This debate is ongoing, but for most people, it is enough to know that overall life satisfaction and satisfaction in the multiple domains of life are closely related.

The theories and discussions that are drawing more interest are those about how the mechanism of evaluating one's life works. How do we decide that we are satisfied with our lives? How do we determine that we are not?

Researcher Jussi Suikkanen's theory of life satisfaction is an intriguing one: a person is satisfied with her life when "a more informed and rational hypothetical version of her" would judge that her life fulfills her ideal life plan (2011). This theory avoids one of the main issues that plague the simpler version of this theory—that a person is happy when she judges that her life fulfills her ideal life plan.

The reason this simpler version of the theory fails to truly capture life satisfaction is that it could inappropriately indicate life satisfaction in a person who is only temporarily or spontaneously happy but does not make any effort to consider how her life is going (Suikkanen, 2011). There is certainly nothing wrong with being spontaneously happy, but it

takes more than just feeling momentarily happy to have life satisfaction!

1.4.4 Factors

The main contributing factors to life satisfaction are not completely understood yet, and the weight they are given by everyone varies, but research has found that they likely fall into one of four sequential categories:

1.4.4.1 Life chances

1.4.4.2 Course of events

1.4.4.3 Flow of experience

1.4.4.4 Evaluation of life (Veenhoven, 1996)

In the life chances category, you will find societal resources like economic welfare, social equality, political freedom, culture, and moral order; personal resources like social position, material property, political influence, social prestige, and family bonds; and individual abilities like physical fitness, psychic fortitude, social capability, and intellectual skill.

In the course of events category, the events can involve factors like need or affluence, attack or protection, solitude or company, humiliation or honor, routine or challenge, and ugliness or beauty. These are the things that can confront us as we go through our daily life, causing us to learn more in one direction or the other: towards greater satisfaction or greater dissatisfaction.

The flow of experience category includes experiences like yearning or satiation, anxiety or safety, loneliness or love, rejection or respect, dullness or excitement, and repulsion or rapture. These are the feelings and responses that we have to the things that happen to us; they are determined by both our personal and societal resources, our abilities, and the course of

events.

Finally, the evaluation of life is an appraisal of the average effect of all of these interactions. It involves comparing our own life with our idea of the "good life," and how the good and the bad in our life balance out.

1.5 CROSSFIT TRAINING

1.5.1 Definition

CrossFit's definition is *"constantly varied, high-intensity, functional movement."* **Functional movements** are universal motor recruitment patterns; they are performed in a wave of contraction from core to extremity; and they are compound movements—i.e., they are multi-joint. They are natural, effective, and efficient locomotors of the body and external objects. But no aspect of functional movements is more important than their capacity to move large loads over long distances and to do so quickly. Collectively, these three attributes (load, distance, and speed) uniquely qualify functional movements for the production of high power. Intensity is defined exactly as power, and intensity is the independent variable most associated with maximizing favorable adaptation to exercise. Recognizing that the breadth and depth of a program's stimulus will determine the breadth and depth of the adaptation it elicits, our prescription of functionality and intensity is constantly varied. We believe that preparation for random physical challenges—i.e., unknown, and unknowable events—is at odds with fixed, predictable, and routine regimens.

1.5.2 Concept

CrossFit is a lifestyle characterized by safe, effective exercise and sound nutrition. CrossFit can be used to accomplish any goal, from improved health to weight loss to better performance. The program works for everyone — people who are just starting and people

who have trained for years.

CrossFit is a core strength and conditioning program. We have designed our program to elicit as broad an adaptational response as possible. CrossFit is not a specialized fitness program but a deliberate attempt to optimize physical competence in each of ten recognized fitness domains. They are Cardiovascular and Respiratory endurance, Stamina, Strength, Flexibility, Power, Speed, Coordination, Agility, Balance, and Accuracy. The CrossFit Program was

developed to enhance an individual's competency in all physical tasks. Our athletes are trained to perform successfully at multiple, diverse, and randomized physical challenges. This fitness is demanded of military and police personnel, firefighters, and many sports requiring total or complete physical prowess. CrossFit has proven effective in these areas. Aside from the breadth or totality of fitness the CrossFit Program seeks, our program is distinctive, if not unique, in its focus on maximizing neuroendocrine response, developing power, cross-training with multiple training modalities, constant training, and practice with functional movements, and the development of successful diet strategies.

1.5.3 Theories

The methodology that drives CrossFit is entirely empirical. We believe that meaningful statements about safety, efficacy, and efficiency, the three most important and interdependent facets of any fitness program, can be supported only by measurable, observable, repeatable facts, i.e., data. We call this approach "evidence-based fitness". The CrossFit methodology depends on full disclosure of methods, results, and criticisms, and we have employed the Internet (and various intranets) to support these values. Our charter is open source, making co-developers out of participating coaches, athletes, and trainers through a spontaneous and collaborative online community. CrossFit is empirically driven, clinically tested, and community developed.

1.5.3.1 Fitness in 100 words

Eat meat and vegetables, nuts and seeds, some fruit, little starch, and no sugar. Keep intake to levels that will support exercise but not body fat.

Practice and train major lifts: Deadlift, clean, squat, presses, C&J, and snatch. Similarly, master the basics of gymnastics: pull-ups, dips, rope climbs, push-ups, sit-ups, presses to handstand, pirouettes, flips, splits, and holds. Bike, run, swim, row, etc, hard and fast.

Five or six days per week mix these elements in as many combinations and patterns as creativity will allow. Routine is the enemy. Keep workouts short and intense.

Regularly learn and play new sports.

1.5.4 Factors

The CrossFit method is to establish a hierarchy of effort and concern that builds as follows:

- Diet - lays the molecular foundations for fitness and health.
- Metabolic Conditioning - builds capacity in each of three metabolic pathways, beginning with aerobic, then lactic acid, and then phosphocreatine pathways.
- Gymnastics - establishes functional capacity for body control and range of motion. Weightlifting and throwing - develop the ability to control external objects and produce power.
- Sport - applies fitness in a competitive atmosphere with more randomized movements and skill mastery.

CrossFit Training Guide, 2020. (www.crossfit.com)

1.6 STATEMENT OF THE PROBLEM

To Study the relationship between Anxiety, Resilience, and Life Satisfaction among the participants following the CrossFit Training Methodology

1.7 OBJECTIVES

- To Study the Correlation of CrossFit Training with Anxiety, Resilience, and Life Satisfaction.
- To Study the Correlation between Anxiety and Resilience.
- To Study the Correlation between Anxiety and Life Satisfaction.
- To Study the Correlation between Life Satisfaction and Resilience.

1.8 RATIONALE

This research could help the coaches understand different dimensions of the training regimen in more depth.

This research would help the people to mould their personalities and would make them more confident as an individual.

The researcher feels this research would help the public to achieve success and give them a different perspective to think about themselves.

The Researcher has chosen the topic after personal experience. The researcher has been doing CrossFit and has also been coaching in the field.

To help Individuals understand the effects of training in CrossFit and the impact it has on their Mental Health, particularly while dealing with Anxiety, Resilience, and Life Satisfaction.

To give insight to coaches to understand different dimensions of the training regimen properly.

1.9 SUMMARY

In this chapter, the theoretical concepts of CrossFit Training, Anxiety, Resilience, and Life Satisfaction have been explained in detail. This chapter summarizes every concept of each variable and provides information that is helpful and aids this research. Objectives have been established in this chapter. Lastly, the Significance, i.e., the importance and the logical ground, i.e., Rationale is embraced.

REVIEW OF LITERATURE

2.1 INTRODUCTION

The main purpose of a literature review is to discover the existing evidence in the selected research field and to address how the research questions have been investigated so far. A systematic review of literature on The Relationship between training in CrossFit and Anxiety, Resilience, and Life Satisfaction.

2.2 REVIEW OF LITERATURE

2.2.1 Anxiety and CrossFit Training

2.2.1.1 Even Warriors Can be Scared: A Survey Assessing Anxiety and Coping Skills in Competitive CrossFit Athletes

Competition anxiety has been demonstrated to decrease sports performance while increasing burnout risk. To date, its degree in CrossFit (CF) is unknown. The present study, therefore, examines competition fear and relevant coping skills as well as potential correlates of both in individuals participating in CF events. A total of n = 79 athletes answered a battery of three questionnaires (competition fear index, athletic coping skills inventory, mindfulness attention awareness scale). Substantial levels of anxiety, particularly regarding the somatic dimension of the competition fear index, were reported. The most pronounced coping skill was freedom of worry. While age or level of the competition showed no/exceedingly small associations

with survey data, sex was correlated to the psychological characteristics: women reported higher competition fears and lower coping skill levels ($p > 0.05$). Competition fears are highly prevalent in CF athletes and the preventive value of population-specific interventions, particularly in females, should be investigated in future trials.

2.2.1.2 The Effect of 8-Week CrossFit Training on Social Physical Anxiety Levels

It is important to preserve some bodily mobility so that people are made up of a system based on movement and the organism remains healthy and vigorous. CrossFit is a widely preferred sport in recent years. For this reason, the study aims to investigate the effect of 8-week CrossFit workouts on social and physical anxiety levels according to gender. 45 volunteers participated in the study. CrossFit workouts were performed for 8 weeks, 3 days a week. In the first 4 weeks, a CrossFit model named "Cindy" was applied. In the last 4 weeks, the Chelsea model, which has the same content as the Cindy model, was applied for 30 minutes. The Wilcoxon signed-rank test was used in the pre-and post-test comparison of the data with no normal distribution, whereas the Mann-Whitney-U test was used to compare the groups. According to the pre-post test results, there is a significant difference in body weight, BMI, and SPAS values ($p < 0.05$). There was a significant difference in SPAS values in favor of women in the comparison between groups ($p < 0.05$). As a result, it was seen that social physical anxiety states were higher in women eight weeks ago. This may be due to the higher body weight and BMI rates in women compared to men.

2.2.2 Resilience and CrossFit Training

2.2.2.1 Psychological resilience in sport: A review of the literature and implications for research and practice

The ability to respond positively to setbacks, obstacles, and failures is essential for any

successful athlete. Although resilience has been studied in general psychology for several decades, it is only recently that researchers and practitioners have begun to explore the construct within the sports context. The purpose of this article is to review the current state of resilience scholarship in sports and to offer guidelines for future research and interventions in this area. Studies of resilience in sport to date have either used experimental designs to investigate resilience to performance failure, or qualitative interview designs to understand the thoughts and beliefs of athletes who have successfully overcome adversity. Researchers who wish to study sports resilience in the future should think carefully about how they operationalize the construct.

Furthermore, knowledge will be enhanced by the development of a sport-specific resilience measure and the use of more sophisticated qualitative approaches and advanced statistical modeling procedures. Sports practitioners can learn from resilience-building programs developed in other settings as they, craft evidence-based interventions to enhance resilience in athletes.

2.2.2.2 Physical Fitness and Resilience A Review of Relevant Constructs, Measures, and Links to Well-Being

This report is one of a series designed to support Air Force leaders in promoting resilience among their Airmen, civilian employees, and Air Force family members. It examines the relationship between physical fitness and resilience, using key constructs found in the scientific literature that address work-related physical fitness and health-related physical fitness. Supporting or increasing the levels of physical fitness identified in this report may facilitate resilience and can protect Airmen, civilian employees, and Air Force families from the negative effects of stress. The report also reviews interventions designed to promote physical fitness applicable at the individual, unit, family, and community levels.

2.2.3 Life Satisfaction and CrossFit Training

2.2.3.1 "THE CROSSFIT COMMUNITY" AND ITS INFLUENCE ON ATHLETES' LIFE SATISFACTION AND WELL-BEING

Despite strong evidence indicating that physical activity provides many health benefits, most individuals are not active, and this knowledge is not sufficient motivation. Research has indicated that social support through communities encourages people to engage in healthy behaviors. Some sports, one being CrossFit, have become known for encouraging support amongst athletes, where they are drawn to the sport not only because of the intense workouts but also because of the fostered community. For this dissertation, three studies aim to get an understanding of how participation in CrossFit influences one's sense of community and how this in turn could lead to an increase and commitment to physical activity, and ultimately to an increase in well-being and life satisfaction.

2.2.3.2 Daily Physical Activity and Life Satisfaction across Adulthood

Physical activity is considered a valuable tool for enhancing life satisfaction. However, the processes linking these constructs likely differ across the adult lifespan. In older adults, the association between physical activity and life satisfaction appears to involve usual levels of physical activity (i.e., a between-person association driven by differences between more and less active people). In younger adults, the association has consistently been based on day-to-day physical activity (i.e., a within-person association driven by differences between more and less active days). To resolve this inconsistency, a daily diary study was conducted with a lifespan sample of community-dwelling adults (age 18– 89 years; $N = 150$) over three 21-day measurement bursts. Usual physical activity was positively associated with life satisfaction in middle and older adulthood; however, this association was not present in young adulthood. When present, this between-person association was mediated by physical

and mental health. A within-person association between physical activity and life satisfaction was also present (and did not differ across age). Generally, on days when people were more physically active than was typical for them, they experienced greater life satisfaction. Age differences in life satisfaction followed a cubic trajectory: lower during emerging adulthood, higher during midlife, and lower during older adulthood. This study adds to accumulating evidence that daily fluctuations in physical activity have important implications for well-being regardless of age and clarifies developmental differences in life satisfaction dynamics that can inform strategies for enhancing life satisfaction.

2.2.4 CrossFit Training, Anxiety, Resilience, and Life Satisfaction 2.2.4.1 Psychological variables of CrossFit participants: a systematic review

Objective - This study aimed to review the existing literature concerning the psychological variables of CrossFit participants.

Methodology - This review followed the PRISMA guidelines and was documented in the PROSPERO registry (CRD42018091177). Six electronic databases (SCOPUS, PubMed, SPORTDiscus, Web of Science, EMBASE, and Cochrane) were searched from their inception through July 2020. The methodological quality of the studies was assessed.

Results - Thirty-four studies met the inclusion criteria. We observed an increase in satisfaction, clinical addiction, and enjoyment among participants related to exercise social improvement, and high intrinsic motivation to participate for the purpose of enjoyment, challenge, and affiliation. Perceptions of effort were high among CrossFit participants. Some studies found that the reaction time was impaired after the CrossFit session, whereas others found no changes in mental health, self-esteem, and well-being after training.

Conclusion - Adherence and maintenance of the practice of CrossFit are related to

psychological variables such as motivation and satisfaction with basic psychological needs. CrossFit participants demonstrated a high perception of effort, intrinsic motivation, and reasons for practice such as enjoyment, challenge, and affiliation. The quality assessment demonstrated the need for more detail in the methods section of future investigations. Additional high-quality studies are needed to investigate the effects of CrossFit training on the mental health of participants.

2.2.4.2 Social identity and athlete identity among CrossFit members: an exploratory study on the CrossFit Open

The exercise regime CrossFit is known for its strong community among members. Furthermore, CrossFit has positioned itself as a sport and labeled participants as athletes. CrossFit's strong community and positioning strategy should have implications on members' identity. Research on CrossFit is incipient, and none has examined it from an identity perspective. This study, therefore, explored CrossFit participants' social identity and athletic identity before and after members participated in CrossFit's annual competition, the CrossFit Open. Thirty-four participants were recruited into a pre-post quasi-experimental design study. Social identity was high among members, athlete identity was modest and both measures were stable over time. Further analysis suggests that while some may identify as athletes, others do not. Thus, by positioning CrossFit as a sport, divisions may be unintentionally created around role identity. This could have negative implications because if hierarchies develop, an individual's social identity may be challenged, which may ultimately harm the community.

2.2.4.3 The Physiological and Psychological Benefits of CrossFit Training – A Pilot Study

CrossFit has been one of the fastest-growing training methods in the fitness industry since its inception in 2000. CrossFit combines classic strength and conditioning along with gymnastics

movements, Olympic weightlifting, and other functional movements into a constantly varied, high-intensity workout. The success of CrossFit and what seems to be exponential growth of their over 10,000 affiliated gyms is undeniable. This popularity might stem from two main factors: the physiological changes of training and the psychological benefits of a community's emphasized, social atmosphere. However, there is very limited research evidence supporting the potential benefits of CrossFit. This study was conducted to investigate the physiological and psychological benefits of CrossFit training in a healthy adult population undergoing their first exposure to the training method. Sixteen participants were recruited from a local CrossFit affiliate in San Angelo, Texas. Participants completed a series of self-report psychological questionnaires including the Motives for Physical Activity Measures (MPAM), Mental Health Inventory 38 (MHI-38), and the Group Environment Questionnaire (GEQ). Following these questionnaires, physical metrics including heart rate, blood pressure, height, body weight, and body composition via Dual-energy X-ray Absorptiometry (DXA), along with performance measures including 1-RM back squat, 1-RM bench press, vertical jump test, and a Wingate Anaerobic Power Test were conducted. The CrossFit program was conducted for 8 weeks by certified CrossFit coaches at the local affiliate gym. After the 8-week training, the participants were reassessed using the same measures. Throughout the study, 6 participants completed the program (2 males, 4 females, 36.2 ± 10.8 years of age, 73.6 ± 7.4 kg, 167.6 ± 5.5 cm, and 31.0 ± 9.2% body fat). Despite the large attrition rate, there were statistically significant increase of lean mass (1.44 ± 1.26 kg; $p = 0.039$), decrease of mean fat (1.67 ± 1.17 kg; $p = 0.017$) and changes in interest subset of motivation from MPAM motivational test ($p < 0.05$). In conclusion, this pilot study suggests that CrossFit training might be beneficial for improving body composition and concurrently changes certain motivational factors to continue engaging in fitness activity. Further studies with a longer intervention period and larger sample size are needed to support these findings.

2.2.5 Anxiety, Resilience, and Life Satisfaction

2.2.5.1 Effects of Resilience on Mental Health and Life Satisfaction

This study aimed to investigate the effect of resilience on mental health and life satisfaction. In a cross-sectional study, 287 Shiraz University students (173 females and 114 males) with a mean age of 23.17 years (SD 4.9) were assessed. Subjects filled out the Conner-Davidson Resilience Scale (CD-RISC), short form of Depression-Anxiety-Stress Scale (DASS), and Satisfaction with Life Scale. Data were analyzed using structural equation modeling. Simultaneous hierarchical regression revealed that negative emotions such as depression, anxiety, and stress have significant mediating roles on family resilience ($p<0.001$) and life satisfaction ($p<0.001$). Resilience will lead to life satisfaction employing reduced levels of negative emotions. Resilience has, in fact, an indirect effect on life satisfaction.

2.2.5.2 Life satisfaction, anxiety, depression, and resilience across the life span of men

To determine (a) the relationship between life satisfaction, anxiety, depression, and aging in the male community and (b) to identify the impact of vulnerability factors, and personal and social resources on life satisfaction and distress. A stratified random sample of the German male population (N = 2144) was investigated by standardized questionnaires on life satisfaction (FLZ(M)), depression, anxiety (PHQ), resilience (RS-11), and self-esteem (RSS). No age-related change was found regarding overall life satisfaction. Satisfaction with health decreased in midlife (51-60 years), while the importance of health increased. The importance of and satisfaction with partnership and sexuality were only reduced in the oldest group (70+). Anxiety was highest around midlife (51- 60 years), accompanied by reduced resilience and self-esteem. No clear age-related change was found regarding depression. Life satisfaction was strongly associated with resilience, lack of unemployment, the presence of a partnership, positive self-esteem, a good household income, the absence of anxiety and depression, and

living in the Eastern states. Personal and social resources and the absence of anxiety and depression are of crucial importance for the

maintenance of life satisfaction in aging men. There is also evidence of a crisis around midlife manifested by health concerns, anxiety, and reduced resilience.

2.2.5.3 Resilience and perceived stress: predictors of life satisfaction in the students of success and failure

The present research aimed to determine the relationship between *resilience* and *perceived stress* with life satisfaction in the students of success and failure. The research sample consisted of 120 who were selected from among the students of success and failure through the random sampling method. To collect the data, the *Resilience Scale, Perceived Stress Scale, and Life Satisfaction Scale* were used. The results showed that resilience and perceived positive stress are positively related to life satisfaction in the students of success and failure ($P < 0.01$). Also, perceived negative stress is negatively related to life satisfaction in the students of success and failure ($P < 0.01$). The result of multiple regression showed that psychological resilience and perceived stress explained 31 and 49 percent of the variance of life satisfaction in the students of success and failure, respectively. The results that increase resilience and decrease stress become more satisfied leads to more satisfaction because they feel better and developed resources for living well.

2.3 SUMMARY

This chapter summarises various previous research reviews of all 4 variables of the Research – CrossFit Training, Anxiety, Resilience, and Life Satisfaction and gives the insight to answer the questions about the variable's interrelationship.

METHODOLOGY

3.1 INTRODUCTION

This chapter includes the methodology used to carry out the research project. This chapter includes operational definitions of the variables, the plan of the research, hypothesis, sample, tools, procedure, and the proposed statistical analysis.

3.2 VARIABLES UNDER STUDY

3.2.1 Operational Definitions

3.2.1.1 Anxiety

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure.

3.2.1.2 Resilience

Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress—such as family and relationship problems, serious health problems, or workplace and financial stressors.

3.2.1.3 Life Satisfaction

Life Satisfaction is the extent to which a person finds life rich, meaningful, full, or of high quality. Numerous standardized measures have been developed to provide an index of a person's life satisfaction in comparison to various normative groups. Improved life satisfaction is often a goal of treatment, especially with older people.

3.2.1.4 CrossFit Training

CrossFit is "constantly varied, high-intensity, functional movement."

3.3 Research Design

3.3.1 Purpose Statement

To Study the relationship between Anxiety, Resilience, and Life Satisfaction among the participants following the CrossFit Training Methodology

3.3.2 Technique

The study was a correlational type of research.

Correlational research is a type of non-experimental research method in which a researcher measures two variables, understands, and assesses the statistical relationship between them with no influence from any extraneous variable. Our minds can do some brilliant things.

3.3.3 Methodology

There are many different methods you can use in correlational research. To test your hypothesis, you will statistically analyze quantitative data. Correlations can be strong or weak.

The most common data collection methods for this type of research include surveys, observations, and secondary data. Academic research often combines various methods. It is

important to carefully choose and plan your methods to ensure the reliability and validity of your results.

3.3.4 Objections

It is important to remember that correlation does not imply causation**.** Just because you find a correlation between two things does not mean that one of them causes the other.

Although correlational research cannot *prove* causation, with a large amount of carefully collected and analyzed data, it can strongly support a causal hypothesis. In the examples above, the health effects of passive smoking and the greenhouse effect have been supported by so much robust correlational evidence that a causal relationship is accepted by scientists.

3.3.5 Measurement

3.3.5.1 Survey

A simple way to research the relationship between variables is through surveys and questionnaires. You can conduct surveys online, by mail, by phone, or in person. You ask respondents questions related to the variables you are interested in, and then statistically analyze the responses.

3.3.5.2 Data Collection

Data collection is the process of gathering and measuring information on targeted variables in an established system, which then enables one to answer relevant questions and evaluate outcomes.

3.3.5.2 Data Collection

Research data analysis is a process used by researchers for reducing data to a story and interpreting it to derive insights. The data analysis process helps in reducing a large chunk

of data into smaller fragments, which makes sense.

3.4 HYPOTHESIS

- Anxiety is low, Resilience is high, and Life Satisfaction is High in Individuals who follow the CrossFit Training Methodology.
- There is a correlation between Anxiety and Resilience within the CrossFit Training Methodology.
- There is a negative correlation between Anxiety and Life Satisfaction within the CrossFit Training Methodology.
- There is a positive correlation between Life Satisfaction and Resilience within the CrossFit Training Methodology.

3.5 SAMPLE

- Type of Sampling – Purposive Sampling.
- Total of 60 participants. (30 males and 30 females)
- Participants must be doing CrossFit Training at least 3 days a week for the past 6 months to be valid for testing.
- Participants must be in the Age Group of 18 – 40.
- Participants must be Single.
- Participants must be either currently Working or College Students.

3.6 TOOLS

3.6.1 Anxiety

BECKS ANXIETY INVENTORY (BAI) - Beck AT, Steer RA. 1991.

3.6.1.1 PURPOSE - The BAI is a brief measure of anxiety with a focus on somatic symptoms of anxiety that was developed as a measure adept at discriminating between anxiety and depression.

3.6.1.2 CONTENT - The BAI is administered via self-report and includes assessment of symptoms such as nervousness, dizziness, inability to relax, etc.

3.6.1.3 NUMBER OF ITEMS - The BAI has a total of 21 items.

3.6.1.4 RESPONSE OPTIONS / SCALE - Respondents indicate how much they have been bothered by each symptom over the past week. Responses are rated on a 4-point Likert scale and range from 0 (not at all) to 3. (severely)

3.6.1.5 METHOD OF ADMINISTRATION - Paper and pencil administered. This is a self-report or interviewer-administered questionnaire that can be administered in an individual format.

3.6.1.5 SCORE INTERPRETATION - Scoring is easily accomplished by summing scores for items. The total score ranges from 0–63. The following guidelines are recommended for the interpretation of scores: 0–9, normal or no anxiety; 10– 18, mild to moderate anxiety; 19–29, moderate to severe anxiety; and 30–63, severe anxiety. To this author's knowledge, no published cut scores are available for rheumatologic populations.

3.6.1.6 PSYCHOMETRIC INFORMATION

3.6.1.6.1 VALIDITY - Construct validity studies show good convergence of the BAI with other measures of anxiety including the Hamilton Anxiety Rating Scale ($r = 0.51$), the STAI ($r = 0.47–0.58$), and the anxiety scale of the Symptom Checklist-90 ($r = 0.81$) (22). Although

the BAI appears to be less correlated with depression scales than the STAI, correlations with depression scales remain substantial (e.g., correlation with Beck Depression Inventory r = 0.61). While to this author's knowledge, the BAI has not been validated in rheumatology populations, studies among other populations with medical comorbidities (e.g., older adults) suggest that due to the emphasis on somatic symptoms, the BAI did not perform similarly to younger populations (yielded somatic factors in older adults), and therefore the discriminant validity may be less robust than in younger or healthy populations (23).

3.6.1.6.2 RELIABILITY - Internal consistency is high with Cronbach's alphas ranging from 0.90 to 0.94 and has been tested in large samples of psychiatric patients, college students, and community-dwelling adults (24–26). Test-retest coefficients are reasonable and range from 0.62 (7-week interval) to 0.93 (1- week interval).

3.6.1.6.3 ABILITY TO DETECT CHANGE - The BAI has been demonstrated to be responsive to change over time both in psychiatric populations (27) and in medical populations (28). One study tested the BAI longitudinally throughout a treatment trial (duloxetine) for the treatment of fibromyalgia and did not show a significant BAI change over time; however, it is important to note that anxiety was not the targeted outcome of this study (19).

3.6.1.7 CRITICAL APPRAISAL OF OVERALL VALUE TO THE COMMUNITY

3.6.1.7.1 STRENGTHS - The BAI is a relatively brief, easily administered, and easily scored measure of anxiety. It has sound psychometric properties and has demonstrated sensitivity to change.

3.6.1.7.2 CAVEATS AND CAUTIONS - The primary limitations of the BAI are the relatively limited scope of symptoms evaluated and the lack of validation studies specific to

rheumatology populations. The BAI was developed to reduce overlap with depressive symptoms, and as a result tends to focus more exclusively on somatic (e.g., heart racing, dizziness) symptoms. In medical conditions, these symptoms have the propensity to overlap with some physical aspects of medical conditions and, therefore, a cautious interpretation would be warranted. The BAI does not assess other primary symptoms of anxiety, most notably worry and other cognitive aspects of anxiety. In summary, for rheumatology, unless accompanied by other measures that include cognitive (ruminative) aspects of anxiety, the BAI may provide a limited assessment of anxiety.

3.6.2 Resilience

Brief Resilience Scale (BRS) - Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. 2008.

3.6.2.1 BACKGROUND - While resilience has been defined as resistance to illness, adaptation, and thriving, the ability to bounce back or recover from stress is closest to its original meaning. Previous resilience measures assess resources that may promote resilience rather than recovery, resistance, adaptation, or thriving. Purpose: To test a new brief resilience scale.

3.6.2.2 METHOD - The brief resilience scale (BRS) was created to assess the ability to bounce back or recover from stress. Its psychometric characteristics were examined in four samples, including two student samples and samples of cardiac and chronic pain patients. Results: The BRS was reliable and measured as a unitary construct. It was predictably related to personal characteristics, social relations, coping, and health in all samples. It was negatively related to anxiety, depression, negative affect, and physical symptoms when other resilience measures and optimism, social support, and Type D personality (high negative affect and high social inhibition) were controlled. There were large differences in BRS scores

between cardiac patients with and without Type D and women with and without fibromyalgia.

3.6.2.3 CONCLUSION - The BRS is a reliable means of assessing resilience as the ability to bounce back or recover from stress and may provide unique and important information about people coping with health-related stressors.

3.6.2.4 PURPOSE – The brief resilience scale is a simple, self-assessment tool that individuals can use to assess their levels of resilience.

3.6.2.5 NUMBER OF ITEMS - It consists of six statements for individuals to agree or disagree with. When completed it generates a resilience score of between 6 and 30.

3.6.2.6 METHOD OF ADMINISTRATION - Paper and pencil administered. This is a self-report or interviewer-administered questionnaire that can be administered in an individual format.

3.6.2.7 SCORE INTERPRETATION - The tool asks individuals to decide how much they agree or disagree with six statements. Each answer is allocated a number. Once all six statements have been assessed, the individual can total up their numbers. This summing up will give them an overall resilience score of between 6 and 30.

3.6.2.8 PSYCHOMETRIC INFORMATION

3.6.2.8.1 VALIDITY - The BRS was positively correlated with resilience measures, optimism, and purpose in life, and negatively correlated with pessimism and alexithymia. In addition, it was positively correlated with social support and negatively correlated with negative interactions. Finally, it was consistently positively correlated with active coping and positive reframing and negatively correlated with behavioral disengagement, denial, and self-blame. Regarding health-related outcomes, the BRS was consistently negatively correlated with perceived stress, anxiety, depression, negative affect, and physical symptoms.

In addition, it was positively correlated with positive affect in three of the four samples and with exercise days per week in the cardiac rehabilitation sample. It was negatively correlated with fatigue in the cardiac sample and negatively correlated with fatigue and pain in the sample of middle-aged women.

3.6.2.8.2 RELIABILITY - The results for each sample revealed a one-factor solution accounting for 55– 67% of the variance (Samples 1–4 = 61%, 61%, 57%, 67%, respectively). The loadings ranged from .68 to .91. Internal consistency was good, with Cronbach's alpha ranging from .80–.91(Samples 1–4 = .84, .87, 80, .91, respectively). The BRS was given twice in two samples with test-retest reliability (ICC) of .69 for one month in 48 participants from Sample 2 and .62 for three months in 61 participants from Sample 3.

3.6.2.8.3 ABILITY TO DETECT CHANGE - BRS scores between men and women within samples, between participants with Type D and without Type D in Sample 3, and between women with and without fibromyalgia in Sample 4. There were no differences between men and women in Samples 1 and 2, but BRS scores were higher in men ($M = 4.07$, $SD = 0.66$) than for women ($M = 3.67$, $SD = 0.70$) in Sample 3 ($t = 2.673$, $df = 110$, $p < .01$, $d = .60$). Gender differences could not be examined in Sample 4 because it only included women. In Sample 3, the BRS scores were higher for the 93 cardiac patients without Type D ($M = 4.11$, $SD = 0.60$) than for the 19 cardiac patients with Type D ($M = 3.27$, $SD = 0.67$; $t = 5.318$, $df = 110$, $p < .001$, $d = 1.32$). Finally, in Sample 4, BRS scores were higher for the 30 women without fibromyalgia ($M = 3.96$, $SD = 0.58$) than for the 20 women with fibromyalgia ($M = 3.09$, $SD = 0.93$; $t = 4.074$, $df = 48$, $p < .001$; $d = 1.12$).

3.6.2.9 CRITICAL APPRAISAL OF OVERALL VALUE TO THE COMMUNITY

3.6.2.9.1 STRENGTHS - The BRS may be uniquely related to health when controlling for previous resilience measures and measures of individual resilience resources (e.g., optimism

and social support). Since the BRS is framed about negative events ("stressful events," "hard times," "difficult times," "set

backs"), it is not surprising that its unique effects were specific to reducing negative outcomes (anxiety, depression, negative affect, physical symptoms). Third, the relationship that we found between the BRS, and resilience resources suggests it may mediate the effects of resilience resources on health outcomes. Resources such as optimism, social support, active coping, and the range of those assessed by previous resilience measures may facilitate the ability to recover from stress or adversity. The ability to recover itself may, in turn, have a more direct relationship with health outcomes.

3.6.2.9.2 CAVEATS AND CAUTIONS - These studies have limitations that lay the groundwork for future studies using the BRS. The BRS needs to be used in longitudinal studies to determine whether it predicts recovery from important health stressors. In addition, the BRS needs to be compared with physiological indicators of bouncing back or recovery from stress and illness (Charney, 2004). Last, the relationship between the BRS and other forms of positive adaptation,

such as thriving and posttraumatic growth, and their effects on health need to be examined.

3.6.3 Life Satisfaction

Satisfaction with Life Scale (SWLS) - Pavot, W., & Diener, E. 2008

3.6.3.1 BACKGROUND - The Satisfaction with Life Scale (SWLS) has been widely used and has proven to be a valid and reliable instrument for assessing satisfaction with life in diverse population groups, however, research on satisfaction with life and validation of different measuring instruments in Mexican adults is still lacking. The objective was to evaluate the psychometric properties of the Satisfaction with Life Scale (SWLS) in a

representative sample of Mexican adults.

3.6.3.2 METHODS - This is a methodological study to evaluate satisfaction with life scale in a sample of 13,220 Mexican adults 50 years of age or older from the 2012 Mexican Health and Aging Study. The scale's reliability (internal consistency) was analyzed using Cronbach's alpha and inter-item correlations. An exploratory factor analysis was also performed. Known-groups validity was evaluated by comparing good-health and bad-health participants. Comorbidity perceived financial situation, self-reported general health, depression symptoms, and social support were included to evaluate the validity between these measures and the total score of the scale using Spearman's correlations.

3.6.3.3 RESULTS - The analysis of the scale's reliability showed good internal consistency ($\alpha = 0.74$). The exploratory factor analysis confirmed the existence of a unique factor structure that explained 54% of the variance. SWLS was related to depression, perceived health, financial situation, and social support, and these relations were all statistically significant ($P < .01$). There was a significant difference in life satisfaction between the good- and bad-health groups.

3.6.3.4 CONCLUSIONS - Results show good internal consistency and construct validity of the SWLS. These results are comparable with results from previous studies. Meeting the study's objective to validate the scale, the results show that the Spanish version of the SWLS is a reliable and valid measure of satisfaction with life in the Mexican context.

3.6.3.5 PURPOSE – The SWLS is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life.

3.6.3.6 NUMBER OF ITEMS - The SWLS consists of 5 statements for individuals to strongly agree all the way to strongly disagree with.

3.6.3.7 METHOD OF ADMINISTRATION - Paper and pencil administered. This is a self-report or interviewer-administered questionnaire that can be administered in an individual format.

3.6.3.8 SCORE INTERPRETATION - Scoring ranges from 5 to 35. Extremely Dissatisfied too Extremely Satisfied.

3.6.3.9 PSYCHOMETRIC INFORMATION

3.6.3.9.1 INTERNAL CONSISTENCY - The analysis of the reliability of the SWLS showed an internal consistency of 0.74 (Cronbach's alpha). Similarly, we confirmed that the inter-item correlation was significant, and all the items had moderate to high correlations with the scale (item-test), with values in the range of 0.64 to 0.74.

The SWLS is a 7-point Likert-style response scale. The possible range of scores is 5-35, with a score of 20 representing a neutral point on the scale. Scores between 5-9 indicate the respondent is extremely dissatisfied with life, whereas scores between 31-35 indicate the respondent is extremely satisfied. The coefficient alpha for the scale has ranged from .79 to .89, indicating that the scale has high internal consistency. The scale was also found to have good test-retest correlations (.84, .80 over a month interval). For a detailed psychometric description of the SWLS see Pavot, W., & Diener, E. (2008). The Satisfaction with Life Scale and the emerging construct of life satisfaction. Journal of Positive Psychology, 3, 137–152.

3.6.3.9.2 VALIDITY - Mean score of the SWLS was higher (less satisfaction) in the bad-health (n = 12 307) group compared to the good-health group (n = 905) as expected, and the difference between the groups was statistically significant ($P < .01$). Mean score of the SWLS for the bad-health group was 7.0 (S.D. = 2.3) and 6.0 (S.D. =1.6) for the good-health group.

3.6.3.9.3 RELIABILITY – We estimated the scale reliability using the Cronbach alpha index, which was a= .84. Other SWLS validation studies found Cronbach alpha indexes: a= .88 (Sweden; Hultell & Gustavsson, 2008), a= .88 (Spain; Vazquez, Duque, & Hervas, 2013) a= .85 (Netherlands; van Beuningen, 2012), a= .83 (Malaysia; Swami & Chamorro-Premuzic, 2009), a= .82 (Chile; Vera Villarroel, Urzua, Pavez, Celis Atenas, & Silva, 2012). Further item analysis exploring the possibility to strengthen the scale reliability if any of the items were deleted gave negative results. The alpha values if the item deleted ranged between .78 and .83. According to the results, the SWLS can be used as a reliable tool for the assessment of life satisfaction in the Greek population.

3.6.3.10 CRITICAL APPRAISAL OF OVERALL VALUE TO THE COMMUNITY

Results show good internal consistency and construct validity of the SWLS. These results are comparable with results from previous studies. Meeting the study's objective to validate the scale, the results show that the Spanish version of the SWLS is a reliable and valid measure of satisfaction with life in the Mexican context.

3.7 PROCEDURE FOR DATA COLLECTION

3.7.1 Survey

The researcher made an Online Survey using Google Forms and sent it out via E-mail, social media, and Messaging. The Survey got a total of 64 responses from a total of 34 males and 30 females.

3.7.2 Data Collection

Data Collection was done through the questionnaire which was sent out. All the responses were collected, and Statistical Package for the Social Sciences (SPSS) was used to get the Descriptive Statistics and Test Statistics.

3.8 PLAN FOR STATISTICAL ANALYSIS

Statistical Package for the Social Sciences (SPSS) was used to get the Descriptive Statistics and Test Statistics. Through this, the test correlations were found and studied.

Going forward, the conclusions were analyzed in comparison to all the coefficients.

3.9 SUMMARY

In this chapter, we saw that, for this study, a Sample of 30 Men and 30 Women was chosen using purposive sampling. Becks Anxiety Inventory (BAI), Brief Resilience Scale (BRS), and, The Satisfaction with Life Scale (TWLS) were used for this purpose. N hypotheses have been stated for this study. The procedure for data collection has been explained in this chapter. Descriptive statistics i.e., Mean & SD, and inferential statistics i.e., correlation & 't' test are going to be used for analyzing the collected data.

RESULT AND DISCUSSION

4.1 INTRODUCTION

The objective of the study was to study the correlation of CrossFit Training with Anxiety, Resilience, and Life Satisfaction, to study the correlation between Anxiety and Resilience, to study the correlation between Anxiety and Life Satisfaction, and to study the correlation between Life Satisfaction and Resilience. For this purpose, data were collected from an incidental sample of 30 Men and 30 Women. The analysis is presented below.

4.2 DESCRIPTIVE STATISTICS

Table 1.1: Descriptive Statistics

Total	Mean	Std. Deviation	Frequency	Percent	Valid Percent

Anxiety	12.58	11.599	64	100	100
Resilience	18.44	3.251	64	100	100
Life Satisfaction	11.69	6.645	64	100	100

Table 1.2: Descriptive Statistics

		Age	**Gender**	**Anxiety Total Score**	**Resilience Total Score**	**Life Satisfaction Total Score**
N	**Valid**	64	64	64	64	64
	Missing	0	0	0	0	0
Mean		25.8750	1.5625	12.5781	18.4675	22.6875
Median		23	2	9	19	24
Mode		22	2	9	21	26
Skewness		.661	-.258	1.565	-.648	-.377
Std. Error of Skewness		.299	.299	.299	.299	.299
Kurtosis		-.555	-1.997	2.435	.061	-.615
Std. Error of		.590	.590	.590	.590	.590

Kurtosis						
Minimum		15	1	0	9	9
Maximum		39	2	56	24	35

4.3 CORRELATION

Table 2: Correlation

			Anxiety Score	**Resilience Score**	**Life Satisfaction Score**
Spearman's Rho	**Anxiety Total Score**	Correlation Coefficient	1.00	-.469**	-.315*
		Sig. (2-tailed)	.	.00	.011
		N	64	64	64
	Resilience Total Score	Correlation Coefficient	-.469**	1.00	.205
		Sig. (2-tailed)	.00	.	.104

		N	64	64	64
	Life Satisfaction Total Score	Correlation Coefficient	-.315*	.205	1.00
		Sig. (2-tailed)	.011	.104	.
		N	64	64	64

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.3.1 Anxiety and Resilience Statistics

Table 3: Anxiety-Resilience

		Anxiety - Resilience
Spearman's Rho	**Correlation Coefficient**	**-.469****
	Sig. (2-tailed)	**.00**
	N	**64**

**. Correlation is significant at the 0.01 level (2-tailed).

4.3.2 Anxiety and Life Satisfaction Statistics

Table 4: Anxiety-Life Satisfaction

		Anxiety - Resilience
Spearman's Rho	**Correlation Coefficient**	**-.315***
	Sig. (2-tailed)	**.011**
	N	**64**

*. Correlation is significant at the 0.05 level (2-tailed).

4.3.3 Resilience and Life Satisfaction Statistics

Table 5: Resilience-Life Satisfaction

		Anxiety - Resilience
Spearman's Rho	**Correlation Coefficient**	**.205**
	Sig. (2-tailed)	**.104**
	N	**64**

4.4 DISCUSSION

The purpose of this study was to study the relationship between Anxiety, Resilience, and Life Satisfaction among the participants who follow the CrossFit Training Methodology. A total of 60 Participants were included out of which 30 were Men and 30 were Women. All participants were in the age group of 18-40 and Single. They were either working or studying at the time of the study. Based on the variables, 3 hypotheses were generated.

4.4.1 There is a Negative Correlation between Anxiety and Resilience

The reason for this hypothesis was based on the study "Psychological variables of CrossFit participants" which found that when there was an increase in levels of Anxiety, there was a decrease in the levels of Resilience and many other such correlations.

In this study, based on the mean, it was found that when the levels of Anxiety of CrossFit participants decreased their Resilience increased. Hence the hypothesis was proved to be true. But this was just based on the Mean and various factors could have hampered the results the researcher would like to do further research on this topic to gain more clarity that whether this was because of CrossFit Training or any other variable.

4.4.2 There is a Negative Correlation between Anxiety and Life Satisfaction

The reason for this hypothesis was based on the study "The Physiological and Psychological Benefits of CrossFit Training" which found that when there was an increase in levels of Anxiety, there was a decrease in the levels of Life Satisfaction along with many other such correlations.

In this study, based on the mean, it was found that when the levels of Anxiety of CrossFit participants decreased their Life Satisfaction increased. Hence the hypothesis was proved to be true. But this was just based on the Mean and various factors could have hampered the results the researcher would like to do further research on this topic to gain more clarity that

whether this was because of CrossFit Training or any other variable.

4.4.3 There is a Positive Correlation between Resilience and Life Satisfaction

The reason for this hypothesis was based on the study "Resilience and perceived stress: predictors of life satisfaction in the students of success and failure" which found that when there was a change in levels of Resilience when there was perceived stress it then resulted in a change in the levels of Life Satisfaction.

In this study, based on the mean, it was found that there was no correlation between levels of resilience and levels of life satisfaction. Hence the hypothesis was proved to be false. But various factors could have hampered the results and the researcher would like to do further research on this topic to gain more clarity that whether this was because of CrossFit Training or any other variable.

4.5 SUMMARY

In this chapter, we discussed the Statistical Findings – Descriptive Statistics and Correlation / Test Statistics and the correlative statistics for each of the variables with each other, along with the discussion for the same.

SUMMARY, CONCLUSIONS, AND SUGGESTIONS

5.1 SUMMARY

In this chapter, we have discussed the conclusions of the study, the Implications of this research, the Limitations of this study, and how these might affect later studies and research i.e., studies in the future on the same or a similar topic.

5.2 CONCLUSION

- There is a correlation of -.469 between Anxiety and Resilience with a significant

correlation at the 0.01 level (2-tailed)

- There is a correlation of -.315 between Anxiety and Life Satisfaction with a significant correlation at the 0.05 level (2-tailed)
- There is a correlation of .205 between Resilience and Life Satisfaction.

According to the Data, the correlations within the variables were as follows.

- Negative Correlation between Anxiety and Resilience.
- Negative Correlation between Life Satisfaction and Anxiety.
- Positive Correlation between Resilience and Life Satisfaction.

According to the Data, the Averages among the participants were as follows.

- Anxiety was found to be Low (Low Anxiety)
- Resilience was found to be Average (Medium Resilience)
- Life Satisfaction was found to be above Average (Slightly Satisfied)

5.3 IMPLICATIONS

This research is useful for Coaches and Athletes to understand the change or stagnation in their Levels of Anxiety, Resilience, and Life Satisfaction and their correlation.

This research is also useful to the general population who wants to know how training in CrossFit can relate to their Anxiety, Resilience, and Life Satisfaction needs.

This research is useful for the evaluation of members in a CrossFit gym setting.

5.4 LIMITATIONS

External factors like

1. Job Stress
2. Other Sports activities
3. Family needs
4. Financial condition
5. College work

May affect the result of the study and can be a reason for the correlations.

- Participants may not follow the training protocol with similar efforts. i.e. efforts may vary.
- Personal life factors may affect future results.

One conceptual problem with the current work is the effect of external variables that play into the participant's psychological situation. At this point, conclusions from the current data need to be extrapolated to question the evolutionary relevance of CrossFit.

Further, this research utilized a correlational design. I took strong steps to demonstrate that the samples were matched along several relevant demographic and dispositional dimensions. I am not able to infer whether the correlation between Anxiety, Resilience, and Life Satisfaction was the result of having outside factors affect them, or if they were, instead, the result of a priori differences among the people who chose to follow multiple training regimens. Future research would benefit from utilizing an approach that includes random assignments to more people from different areas and gyms.

5.5 SUGGESTIONS FOR FURTHER STUDY

The Study of people who follow the CrossFit Training protocol and the correlation between their Anxiety, Resilience, and Life Satisfaction was made by the researcher himself.

Study on people who have been following the CrossFit Training protocol for 6 months.

The correlation between their Anxiety, Resilience, and Life Satisfaction.

Athletes and Coaches who want to understand these psychological correlations in themselves or their athletes, respectively.

In the future, there can be comparative studies on these psychological factors between the general population at large and the specific people who follow the CrossFit Training protocol.

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