

CHILDHOOD TRAUMA AND RESILIENCE

The Effects of Childhood Trauma on College Athletes Resilience

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### Abstract

The study was designed to determine how childhood trauma affected the resilience in college athletes. Through research it was suggested that individuals who experienced childhood adversity had a higher resilience rate as an adult. The participants of the study included college-athletes the University of North Carolina in Pembroke (UNCP), a Division II Institution in the United States, and Warner University, a NAIA institution in the United States. A survey instrument was administered to the college-athlete participants that contained two types of questionnaires that identified the effects of childhood adversity and resilience. A statistically significant difference was found between ACE and RISC questionnaires. Another statistically significant difference was found between the resilience scores and genders of the college athletes.

Key words: College-athlete, resilience, childhood trauma,

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## CHILDHOOD TRAUMA AND RESILIENCE

### Chapter 1

Throughout research, the understanding of mental health has been found to be the most important factor contributing to sports and athletes' performance (Bauman, 2016; Chang et al., 2019; Chapman et al., 2007; Dehnel et al., 2021; Kioumourtzoglou, 2019; Klenck, 2014; NIH, n.d; Thompson & Sherman, n.d). Researchers have found that resilience skills help to maintain both mental health and a physical well-being for college athletes during times of adversity in sports (Bernard, 1997; Masten, 2014; Richardson, 2002; Southwick et al., 2014; Turner and Barker, 2013). Adversity in childhood traumas impact an individual's development of resilience negatively if the proper interventions and support is not offered to an individual after an experience. While the tie between childhood trauma and resilience has been identified, relationships between college athletes' adversity in childhood and the long-term effects on building resilience shown in sports creates validity for a research topic.

Building the protective factors and continually growing resilience skills, can help to enhance athletes' performance in the sport and offer positive coping adaptations in times of adversity. Athletes require high levels of resilience in sports, due to the high demands it brings to an individual mentally and physically. This study was developed to identify the effects of college athletes' childhood traumas and how that has affected the development of the current level of resilience skills within the high demands of being involved in sports.

#### **The Purpose of the Study**

The research was designed to determine how childhood trauma affected the resilience of college athletes. Athletes need high levels of resilience to face the high levels of mental and physical challenges that sports participation demands. Identifying the long-term effects of childhood adversities that the athletes have gone through before the age of 18, could help to

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prove insight on the ability to cope through the challenges of sport. The study's findings may help future college athletes to develop proper resilience skills to help face adversity and enhance performance through the high demands of the sport. In addition, the findings of the study will help the sports medicine staff and coaches to better understand the college athletes.

### **The Rationale**

As athletes' mental health has become a vital part in the sports industry, research in building resilience through childhood trauma to get through future adversities is vital for athletes participating in the high demands of sports. Building resilience through hardships helps athletes to build strength and endurance. No existing research is found on a connection between athletes' childhood trauma and how it affects their resilience in sports.

### **The Hypotheses**

There are three hypotheses the study identifies.

H1: There is no statistically significant relationship between childhood trauma scores and resilience scores.

H2: There is no statistically significant difference between resilience scores based on gender of college athletes.

H3: There is no statistically significant difference between childhood trauma scores based on gender of college athletes.

### **Delimitations**

Delimitations of the study set boundaries that were particular for the research and provide parameters controlled by the researcher (Baumgartner et al., 2021). The study investigated college athletes' childhood traumas and looked at how it affected their resilience in sports. The

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first delimitations were the participants of the study only consisted of the college athletes, a part of the 2022 eligible roster, at the University of North Carolina at Pembroke (UNCP) and Warner University. In addition, every UNCP and Warner university college athlete must be at least the age of 18 to participate in the study. Two instruments were used in the study, one being the Adverse Childhood Experiences (ACE), which identified types of childhood trauma the participant faced before the age of 18. The second instrument used was the condensed version of the Connor Davidson Resilience scale (CDR), that identified the level of strength of the participants' resilience in ten question formats.

### **Definition of Terms**

For the purpose of this study, the following terminology will be referenced throughout the study: All studies have specific terminology that needs to be defined for the reader.

**Adversity-** the hardships and challenges that an individual deals within life:

**Anxiety-** persistent feelings of worry and fear that occur in everyday situations:

**Attention Deficit Disorder (ADD/ADHD)-** neurodevelopmental disorders that affect attention, behaviors, and hyperactivity:

**Childhood trauma-** serious challenges or life-threatening situations that children may go through:

**Coping-** strategies that consciously or unconsciously help with problem solving through a situation:

**Depression-** a decrease in a mood that affects day to day living:

**Eating disorders-** psychological disorders that affect regular food consumption habits:

**Mental health-** an individual's psychological and emotional well-being:

**Performance-** accomplishing a task or duty through a process of actions:



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**Protective factors-** attributes and skills that are developed to eliminate risk in stressful situations and environments:

**Resilience-** the process and ability to cope through stress and challenging experiences:

**Substance abuse-** excessive use of addictive substances that include alcohol or drugs:

**Trauma-**experiences that cause suffering and discomfort to an individual's physical and mental well-being:

In this chapter, pertinent information was presented to set the context for the research study including the investigation of types of childhood traumas the college athletes faced during their youth and how it affects resilience in sport participation in the present. The following chapter provided insight and rationale to the significance of the effects from childhood trauma on a college athlete's resilience to be a valid research subject.

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### Chapter 2

Resilience and the understanding of traumatic experiences has been a staple for the approach in the mental and physical well-being of individuals involved in sports and academics. Through adversity and stressful life experiences, resilience became a positive adaptation to maintain mental, physical, and psychological skills when dealing with these situations. The development of resilience begins in the early stages of life, affected by a variety of factors such as abuse, poverty, parental psychopathology, neglect, and many others (Werner, 1995).

#### **Mental Health**

Mental health has received an increasing amount of attention in the health care community. Health, as defined by the World Health Organization (2016), is "...a state of complete physical, mental and social-well-being and not merely the absence of disease or infirmity" (para. 1). Over the past 20 years, mental health problems have been increasing and becoming more prevalent in society (WHO, 2016). Mental disorders affect one in five adults given a 12-month period and one in three adults at some point in their life (Khawagi et al., 2019). In the United States alone, 18.3% of all adults have a mental illness, 18–25-year-old having a higher rate at 22.1%. In 2015, mental health disorders caused the second common reason for hospitalization for children from birth to 17 years of age (Kioumourtzoglou, 2019). In the past, many have viewed mental health as merely behavioral problems in adolescents. In recent research, studies on classifying mental disorders through different diagnostic models, like International Classification of Diseases (ICD) and Diagnostic and Statistical Manual of Mental Disorders (DSM) have been able to differentiate between behavioral and true mental health problems (Clark et al., 2017). The identification of mental health disorders and the risk factors

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that cause mental health issues, is crucial to be correctly diagnosed and understood for individuals.

### *History of mental health*

In 1843 after the Civil War, the term mental hygiene was used in a book by William Sweetzer, named “Mental hygiene or an examination of intellect and passions designed to illustrate their influence on health and duration of life”, due to the concern of hygiene in the unsanitary conditions during and after the war (Bertolote, 2008, para.3). Around the 1890’s, Dr. Adolf Meyer contributed to the understanding and foundation of the mental hygiene movement. Through his studies and expansive research into understanding mental hygiene, he connects the idea of mental hygiene being to help prevent mental health illness and preserve the health and well-being of individuals (Dreyer, 1976). The psychiatric movement first began in the 19<sup>th</sup> century with a lunacy reform movement of personal and social change. In the 1900’s a man named Clifford Beers, a graduate of Yale and a Wall Street financier, began the mental health reform movement through his struggle of bipolar disorder and suicide attempt (Mental Health America, 2022). Through three hospital visits and a variety of treatment, Beers wrote a book reflecting on his experiences, urging the medical field to improve patient care of individuals with mental disorders. As the movement began, Beers and many others formed an organization, called the National Mental Health Association and Mental Hygiene Association (Bertolote, 2008). Through these associations and the critique of mental health services in the medical field, there was an anti-psychiatry rise (Crossley, 1998).

As the rise for mental health services continued, two important models were developed that are still used today. The ICD was developed around 1853 by William Farr and Marc d’Espine to have an identifiable classification for causes of death (Clark et al., 2017). Once the ICD was

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adopted as the standard classification, revisions were made throughout the years until the WHO officially approved its use to be a classification of mental health disorders in 1948. After the WHO was founded following World War II, its governing body used the ICD and began to make revisions so that it was a standard for an international understanding of identifying disease and mental health conditions (Clark et al., 2017). Through the development of the ICD, a secondary instrument was created in 1952, from the influences of the identification system, called the DSM. Throughout time, revisions, and improvements of both diagnostic systems, has created the two most common diagnostic tools for mental health: DMS-5 and ICD-11. Efforts concerning mental health diagnosis continued to be further researched and observed to help patients understand the experiences and define the disorder (Clark et al., 2017).

### *Types of mental health disorders*

Identifying mental health disorders in youth has been a complicated problem. The ability to distinguish normal behavior from serious mental health problems has become a very important assessment in the well-being of individuals' lives. The process of identification is extremely difficult due to the distinct difference between each disorder. With only 10% of college athletes with known mental health disorders seeking help, identifying the signs and symptoms can help to properly diagnose and offer interventions to many more athletes that struggled (ACSM, 2021). The most common mental health disorders that millions of individuals suffer around the world are further researched in depth within the literature review. The mental health disorders highlighted are seen most in adults that are 18 years and older.

### *Anxiety*

Throughout life, many individuals may face anxiety through everyday life stressors, worries, or fears that are temporary. Individuals that have true anxiety disorders begin to worsen

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overtime, affecting day-to-day living. Anxiety disorders are one of the most common mental disorders, affecting over 30% of adults at one point in life (Muskin, 2021). The APA defines anxiety as, “an emotion characterized by feelings of tension, worried thoughts, and increased blood pressure” (APA, n.d, para.1). Individuals affected have trouble with feelings of worry, fear, doubt, restlessness, and concentration on day-to-day tasks in life (Felman, 2020). In a study by Chorpita and Barlow (1998), they stated that, “...anxiety is considered distinct from the emotion of fear and panic, which is functionally related to actual confrontation with danger, not simply the detection of and preparation for danger” (p.3). Through the development of recognizing anxiety disorders as a major mental health issue, identifying and treating early anxiety can help with individuals’ development mentally and physically. A common treatment called Cognitive Behavioral Treatment (CBT) is used as a non-pharmacological method for anxiety. Other severe anxiety disorders may need various serotonin reuptake inhibitors or a pharmacological approach, which is usually not recommended for performance anxiety (Cassano et al., 2002).

Early developmental diagnosis can help the individuals to be able to identify the stress risk factors and get the immediate treatment needed. In early years, children internalize stressors that cause behavior inhibitions and begin to display temperament issues. The child can be influenced by the environment, parental psychopathologies, traumatic events, and low socioeconomic statuses. Through identifying the risk factors, early intervention programs and targeted support programs have been shown to help individuals learn to cope with the stressors and have a healthier emotional and physical development (Pahl et al., 2012).

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### *Depression*

According to the current research, depression is the most common mental disorder that results from biological, environmental, and psychological factors occurring at any age (NIH, n.d.). Studies of Epidemiology show that adolescents have severe depression 8% to 10% of the time. According to the National Mental Health Association, during any-year period 10% of college students have reported depression or a mood disorder. Depression can be recognized with signs and symptoms such as a decrease in mood, irritability, decrease activity levels and concentration, withdraw from social interactions, and in severe cases thoughts or actions contributing to suicide or possible suicide (NIH, n.d.). Treatments for depression include the use of medication, usually antidepressants that help to chemically control stressors and mood imbalances, psychotherapies, that use CBT or Intrapersonal therapy (IPT), or a combination of both methods (NIH, n.d.).

### *Eating disorders*

Approximately 9% or 28.8 million people of the population in the United States struggle from an eating disorder. Around 26% of those individuals that struggle with an eating disorder attempt suicide each year (ANAD, n.d.). Globally, statistics have increased 3.4% to 7.8% from 2000 to 2018 (SingleCare Team, 2022). The most common types of eating disorders are anorexia nervosa, bulimia nervosa, and binge eating. Every eating disorder derives from distressed thoughts and emotions that can affect the individual physically, psychologically, and socially. Identifying the behaviors of avoiding certain foods, binge eating, purging methods like vomiting or obsessive exercise, can be signs and symptoms of an individual struggling with an eating disorder (APA, n.d.). Detecting eating disorders and providing early intervention is an important way to avoid future serious medical complications. Through various types of mental health and

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nutritional counseling, as well as pharmacological options, individuals can begin to heal physically and mentally through nutrition, decreasing disordered eating habits, and begin to live a better quality of life (NIH, n.d).

### ***Substance Abuse***

Over 19.7 million Americans from young and old ages have struggled with a substance disorder in 2017. The statistics show that 1 out of every 8 adults struggle with both drug and alcohol abuse in the same year (Editorial Staff, 2022). Looking deeper into substance abuse, many individuals that struggle with mental health disorders are at a higher risk than the general population for addiction to drugs and alcohol (Editorial Staff, 2022). Various substances such as nicotine, alcohol, depressants, stimulants, hallucinogens, and any other kind of legal or illegal substance can be abused by the individual resulting in health and social problems. Using high doses, binge drinking, or misusing any kind of substance represents a substance abuse disorder and needs to be immediately intervened. Being away from signs and symptoms such as loss of control, problems in relationships due to continuing use, cravings, worsening of physical and psychological problems, and other impacts that affect the individual's quality of life and well-being are all qualifications of substance abuse. Immediate intervention and proper recovery need to be implemented through proper support systems, behavioral interventions, and other care management strategies to better help the individual struggling with substance abuse have a better quality of life both mentally and physically (McLellan, 2017).

### ***Attention Deficit Disorder (ADD/ADHD)***

Approximately 6.1 million children in the United States have been diagnosed with ADHA or ADD, according to the CDC and Prevention and a parent-report done on the diagnosis and treatment of ADHD among U.S adolescence (CDC, n.d.; Danielson et al., 2018). Diagnosing

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ADHD can be challenging due to other disorders having similar diagnoses, like anxiety, depression, learning disabilities, and so on. ADHD causes an individual to have trouble concentrating, having behavioral or controlling impulses without thinking of the consequences, or be overly active with uncontrollable energy. Those that struggle with ADD have similar issues that cause the individual to be easily distracted from functioning or development, but usually are not as extremely hyperactive with high amounts of uncontrollable impulses. Identifying the symptoms from just behavior issues, can help in the early intervention and treatment for the individual. Common interventions include behavior therapy and medications. Especially when diagnosed at a young age, various therapies and interventions can help in developing strong and positive behaviors and management skills for dealing with ADHD in everyday life and through school (CDC, 2021).

### **Mental health in college athletes**

An athlete's mental health is one of the most important factors in contributing to sports performance. Researchers from the NCAA stated that, "A student athlete's mental health might be viewed as secondary to physical health; however, it is every bit as important for healthy performance" (Thompson & Sherman, n.d, p.2). The mental health of athletes has become an incredibly important issue in sport culture as research on the prevalence of mental issues has increased. Many athletes seriously involved in sports has shown to develop mental health issues in the early years of sport competitions. Without a proper intervention, many athletes do not have the proper psychological coping skills to deal with life's issues, which causes a decrease in sports performance. While recently sport culture has identified a serious issue with mental health, it has been an impeding factor on athletes' mental health, by adding extra pressure for the athlete to act



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a certain way in the face of media and negatively representing mental health as a performance weakness (Bauman, 2016).

Athletes are affected by all types of mental health, including depression, eating disorders, self-medicating, sexual misconduct, personality issues, anxiety, and many other mental health issues from being a college athlete (Chang et al., 2019). The high-performance levels cause a trigger of mental health issues to certain individuals, which can worsen as the season continues and throughout the transition of being a college athlete.

### *Treatment for college athletes*

The diagnosis of mental health disorders and early intervention is crucial for the college athlete. To properly diagnose or recognize a mental health issue, the behavioral, cognitive, emotional/psychological, and physical/medical signs and symptoms need to be evaluated in the individual athlete. Thompson and Sherman, researchers for the NCAA, stated that, “Probably the most serious mistake that anyone can make in (mis)managing a student-athlete with a mental health problem is to respond as if the problem is trivial or is a sign of weakness” (Thompson & Sherman, n.d, p.33). While there are many response levels to the various mental health disorders, each problem needs to be taken seriously and considered an illness with a difficult recovery process. Through the Pre-Participation Examination (PPE), it can be a valid screening tool for identifying and addressing mental health signs and symptoms. Through early screening methods, the medical staff can identify and recognize early mental health issues and develop the proper management and treatment plan (Klenck, 2014).

In developing treatments, psychotherapy can be a form of intervention for mental health disorders that can use non-pharmacological or pharmacological strategies. Licensed mental health care providers, including psychologists, psychiatrists, and counselors, can offer

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psychotherapeutic interventions and help the individual athlete to set goals for the best quality treatment (Neal et al., 2013). With a pharmacological approach, the mental health professional needs to choose what medications would be effective in the treatment for that specific mental health disorder for that individual. Common medications include antidepressants, anti-anxiety medications, stimulants, antipsychotics, and mood stabilizers. Each of the following medications can help in the treatment of various mental health disorders such as anxiety, depression, eating disorders, PTSD, and other mental disorders. Each medication has its own side effects on the individuals, so making sure that the medication is helping and not hindering the athlete's performance and quality of life will be important to the treatment process (NIH, n.d.).

With non-pharmacological treatment, a range of common therapies have been developed to help with the treatment of mental health. Common therapies that are used include CBT, Interpersonal therapy (IPT), Mindfulness-based cognitive therapy (MBCT), and Psychodynamic therapy (PDT) (Progress in mind, 2017). CBT is used to help individuals with positive ways to think and act through adverse situations. Through CBT, it helps the individual to be able to change the thinking and behavioral patterns in certain situations that help to move forward and have an effective way to cope through adversity (Posttraumatic Stress Disorder, 2022). IPT helps the individual to emerge from the conflicting experiences by helping to improve the individuals' interpersonal relationships and social life. Through the therapy, the individual can help with social and interpersonal deficits by helping to find fulfilling relationships and reduce conflicting expectations from social environments that cause distress (Psychology Today, n.d.). MBCT helps the individual to combine meditative practice and attitudes with the use of cognitive therapy, to create mindfulness and find new relationships to various moods (MBCT, n.d.). PDT helps the individual to look at their psychologically process of emotions and

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experiences that cause mental stress through times of adversity. The aspect of therapeutic relationships can help provide defense mechanisms and coping strategies for the individual through adversity (GoodTherapy, 2018). All the therapeutic, both pharmacological and non-pharmacological, mechanisms can be incredibly beneficial for college athletes dealing with mental health disorders that hinder everyday life and athletic performance.

### **Resilience**

While resilience has been thought to be an adapting factor that enables growth through unfavorable life experiences, the concept is more complex in meaning (Southwick et al., 2014). Throughout literature, individuals that possess resilience can strive and bounce back from situations in a quick and efficient way. Resilience is defined by the American Psychological Association (2014) as, "...the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress (para.4)." Through the complexity of adverse events, building resilience becomes a necessity to maintain an individual's well-being (Ungar et al., 2008).

Richardson (2002) explained the concept of resilience as a motivational force through a three-wave resilience theory and model. The resiliency waves derived from, "...phenomenological identifications of characteristics of survivors, mostly young people, living in high-risk situations" (Richardson, 2002, p. 308). In the first wave, it looked at the risk factors and how the individual developed protective factors and strengths through adversity. The second wave investigates how the individual can attain qualities of resilience through the process of dealing with trauma and severe stress events. In the third and final wave, individuals identify motivational factors from developing resilience and reaching self-actualization. (Richardson, 2002). Richardson (2002) further defined the resilience theory as, "... the motivational force

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within everyone that drives them to pursue wisdom, self-actualization, and altruism and to be in harmony with a spiritual source of strength” (p. 309).

Having increased resilience qualities can help individuals adapt in life through biopsychospiritual homeostasis, which refers to the “...state of mind, body, and spirit” (Richardson, 2002, p. 311). Internal and external adverse situations can change the quality of an individual’s life with a variation of stressors and disruptions to the balance. Individuals cling to what is comfortable; changes to a way of life can cause a variation of emotions, resulting in that individual to lose motivation and hope. Richardson (2002) stated that in the process of trying to go back to homeostasis, many face life stagnation that hinders the individual to get past the disruption to grow and gain resilient qualities (Richardson, 2002). Experiencing permanent loss and being chronically symptomatic of that loss is also a factor that can inhibit going back to homeostasis (Richardson, 2002).

While there are many inhibitory factors, Southwick (2014), in a discussion, asked the question of how there are individuals who can cope so well through traumatic events and a great deal of adversity. A study by Bernard (1997) showed that children who experienced heavy trauma and were in high-risk situations, have 50% to 70% more resilience and successful societal indicators in adulthood. In a research study by Southwick (2014), it was found that individuals with resilience can exist after going through severe adversity and heavy trauma. Masten (2014) added to the previous statement discussing an experience in Minnesota with Cambodian refugees noting that a community can be resilient after heavy trauma. Even though the refugees had gone through the fear of the killings in the Khmer Rouge regime before escaping to the United States, Masten (2014) stated that the community is incredibly resilient for the scale of trauma endured.

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The ability to overcome a life altering experience can boost a high level of independent resilience to grow from the situation (Southwick et al., 2014).

Another look into how traumatic events at an early age can cause high amounts of resiliency dealing with future situations, is in a study done by Dehnel et al (2021) on refugee children in Syria. Dehnel et al (2021) stated that, “The Syrian refugee crisis is the largest humanitarian emergency of our time according to the United Nations High commissioner for Refugees” (para. 1). The violence, physical torture, and other heavy traumas have resulted in over 12 million Syrians to flee home, 40% of which being children under the age of 12. Through the study, it was found that while many of the refugees had experienced major psychological effects, many of the children possessed strong resilience and coping mechanisms. The children's resilience is not only an adaptation of the mindset to get through the situations but is also affected by external relationships and social processes. Through traumatic events, children can be influenced to develop resilience skills and protective factors, which will help everyone to recover and cope faster in future high-risk situations (Dehnel et al., 2021).

### *Neurobiology of resilience*

The brain's development is crucial in the early years of life, through the individuals' experiences of various types of stress and stimuli's response (Gogolla, 2017). Neuroimaging has shown that positive alterations to the insular cortex, part of the cerebral cortex in the brain that, “...links sensory experience and emotional valence” (Gogolla, 2017, para. 13), has been the primary physiological location for resiliency. Two neurotransmitters are involved with the brain's process of resilience, Hypothalamic Pituitary Axis (HPA) and Sympathetic Nervous System (SNS). Both contain circuits that help to maintain and balance stress, like cortisol. According to Gogolla (2017), when an individual goes through a traumatic or high stress

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situation, the cortisol in the brain increases, which can cause many health-related problems with resilience not found to bring it back to homeostasis. Understanding the adaptations in the brain and higher stress risk from childhood traumas, can help the individual to create coping mechanisms in resiliency (Rege, 2020).

### *History of resilience in research*

The development and understanding of resilience science became prevalent after a study done in World War II (Masten, 2014). After the war ended, soldiers and children that suffered contributed to an increase in resilience science and mental health research (Masten, 2014). Two important researchers that were affected by the war and contributed to the rise of the science of resilience are Norman Garnezy, a young American soldier at the time, and Emmy Werner, a young girl during the tragedy and destruction of Europe during the time (Masten, 2014).

Analyzing mass-trauma events became subject matter for resilience in types of severe traumatic experiences, the repercussions on the individual, and the recovery process (Masten, 2014).

The term resilience was first recognized in 1992 in a study by Emma Werner in Kauai, Hawaii. Werner (1992) took 698 local children and looked at a variety of environmental, biological, psychosocial, and other risk factors that affected everyone. Through the Kauai Longitudinal Study, Werner (1992) found that one out of every three children had success in adult life and high resilience traits. In addition to the study by Werner (1992), research shows that the youth have positive changes and protective factors in adulthood after going through severe trauma and negative experiences (Werner, 1992). In 1974, a study by Garnezy and Streitman (1974), looked at schizophrenic and psychoneurotic mothers and how the children were affected. Through the study, it gave insight to childhood resilience through difficult

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situations and how despite the situations and behaviors from the schizophrenic mothers, many of the children affected thrived in adulthood (Garmezy & Streitman, 1974).

As research continued, the focus of studies began to identify three sets of factors that help develop resilience: “attributes of the children themselves, aspects of their families, characteristics of their wider social environments” (Luthar et al., 2000, para. 8). By understanding these factors, positive outcomes and protective systems can be developed through, promoting healthy child, family, and community resilience. The importance of recognizing the underlying factors is to help identify the protective process. Understanding the external factors of the child, including the child themselves, can help to develop preventative and intervention strategies when dealing with adverse life situations. Moving forward in research, over the last two decades, resilience studies have shifted to look at how traumatic and adverse life experiences can constitute positive results (Luthar et al., 2000).

### ***Resilience in college-athletes***

Collegiate college athletes have a high demand and importance for resilience in sports. The overall performance and drive in the sport pertains to the level of physical and emotional stressors that affect it. Developing a resilient mindset is a skill that many athletes develop throughout the career and participation in the sport (Lapp & Davidson, 2020). A study on the 2012 Olympic Games promoted the building of resilience through the Theory of Challenge and Threat in States of America (TCTSA). Turner and Barker (2013) addressed how the theory can help to promote motivation and resilience through stressful and emotional situations. The TCTSA can also help to determine the challenging or threatening states that may hinder or negatively influence the individual's performance. Turner and Barker (2013) further explained that the biopsychosocial (BPS) is introduced in times of high risk or challenging states, to

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explain the challenges and physiological process that goes on internally for everyone (Turner & Baker, 2013).

In addition to the explanation of the biopsychosocial model, Turner and Barker (2013) addresses how TCTSA has physiological responses. To measure the challenge and threat state in athletes, cardiovascular (CV) reactivity is used to look at how the blood flow, glucose, and fatty acids are increased or decreased through the changes in the brain, based on the severity of the situation. As various other anatomical processes change and adapt, Turner and Barker (2013) found that through the threat state, decision making and cognitive function were negatively influenced by the physical changes, which in turn caused the athlete's performance levels to significantly decrease. By understanding the challenge and threat states, athletes can develop cognitive resources to decrease the risk of psychological and emotional consequences on performance and resilience in highly stressful situations (Turner & Baker, 2013).

Through the change, the athlete needs to identify indicators physiologically, have exposure to adversity, and recall the experiences to build the psychological toughness and self-confidence in performance. The following example, by Turner and Barker (2013), demonstrated a psychological perspective through high stress and competition of a British tennis player named Andy Murray. Through being defeated four times in the Grand Slam finals, Murray eventually beat the number one player in the world, Novak Djokovic, in the 2012 Olympics. By experiencing the humiliation and discouragement from losing multiple times and being told to give up, Murray took a stand and developed courage and strength by sharpening resilience skills to compete and reach the goal of winning the 2012 Olympics. Based on being exposed to high stress and the mental pressure of competing, shows how important it is to be exposed to adversity for growing psychological developments. The education and training in resilience is



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stressed as a priority in the study for preparing the high-level athletes for challenging, high-stake competitions that will put mental and physical toughness to the test (Turner & Baker, 2013).

### **Childhood Trauma**

Trauma in childhood has some of the most profound effects and consequences to both the individual and problems in society. According to the National Institute of Mental Health, childhood trauma is defined as: “The experience of an event by a child that is emotionally painful or distressful, which often results in lasting mental and physical effects (*What is childhood trauma*, n.d., para 1). The exposure, witnessing, or learning of trauma can result in serious short- and long-term effects that can include post-traumatic stress disorder (PTSD), depression, anxiety, behavior problems, substance abuse, and many other life altering effects (Chapman et al., 2007). As stated by van der Kolk (1994), “The recognition that childhood trauma plays a significant role in the genesis of a variety of mental disorders has stimulated inquiry into the ways that early attachment disturbances are translated into impairment of self-regulation” (p. 145). The inability to develop physiological arousal and disorganized behavior problems has been shown through the consequences of abuse, neglect, and other adverse trauma from childhood (van der Kolk, 1994).

The consequences of adverse childhood traumas come from a variety of risk factors. One major factor that is heavily addressed throughout research is child abuse. A study was conducted on 49 women from the ages of 18 to 45 that were victims of abuse as a child. The results showed that the women had a higher risk of depression over individuals who had not gone through childhood trauma, due to the hyper-reactivity of parts of the brain that were altered by the event. Anxiety, depression, interpersonal sensitivity, and even risk for suicidality are all results from severe trauma that adults faced during childhood (Chapman et al., 2007). A study on

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psychiatrically hospitalized adolescent patients was conducted by Grilo et al (1999). The findings showed that because of the high abuse from childhood, the group was "... categorized by higher levels of dependency, suicidality, violence, impulsivity, and substance abuse" (Grilo et al., 1999, p. 541). Childhood abuse also increases the risk of short, intermediate, and long-term effects of behavioral, psychological, psychiatric, and neurophysiological problems (Grilo et al., 1999).

Neglect and abuse have been found to be a higher risk factor in countries that are less developed. In a study by Viola et al (2016), it looked at the social class of family, as well as other socio-economic effects that resulted in higher rates of neglect and child abuse, both physically and sexually. Lower education and poor living standards are also found to be a contributing factor to child maltreatment (Viola et al., 2016). A supporting study by Pluck et al (2011) looked at 55 homeless adults in the United Kingdom who had low levels of IQ and increased neurobehavioral impairment. The study suggested that it was due to a result of long-term childhood trauma (Pluck et al., 2011).

### ***History of childhood trauma research***

Trauma and the relationship of mental illness was first researched and recognized by a neurologist named Jean-Martin Charcot. In the 19<sup>th</sup> century, Charcot discovered by working with 5,000 patients that over half were suffering from neurological disorders from all varieties of trauma. The definition and meaning of hysteria were changed by Charcot as a psychological disease as a result from patients experiencing a variety of trauma. Once Charcot passed, one of the research students participating in Charcot's research, began to continue research (*The history of psychological trauma*, 2016). In 1992, Freud examined the psychological trauma of soldiers from World War I and how the prolonged war exposure caused symptoms of hysteria. Through

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more research on combat neurosis in World War II, Vietnam War, and other significant historical events, PTSD was developed in 1980 by the American Psychiatric Association because of a severe traumatic event that the individual experienced (*The history of psychological trauma*, 2016).

As research continued, various treatment methods and coping mechanisms were created in response to the high numbers of mental health and psychological issues. One of the first studies on treatment for trauma survivors was in 1988 through a study by Christine Courtois (2002). The study looked at adults who survived sexual abuse as a child and what the long-term effects were because of it. Through the study, Courtois (2002) created a treatment that targeted self-management and processing emotions safely to increase the individual's quality of life and well-being. The continuation of research on crisis interventions and methods on how to help individuals that have faced severe traumatic stress, is continually being developed (Courtois, 2002).

A study was done in 1998 by Felitti et al that dived deeper into the adverse childhood experiences effects on morbidity and mortality later in life, due to the risk factors developed from the trauma. The ACE questionnaire was tested to find the connection between childhood adversity and the rising public and medical problems. A strong relationship was found between several conditions that were the leading causes of death, including heart disease, cancer, liver, and lung disease, to childhood exposure to household dysfunction, abuse, and other many risk factors (Felitti et al., 1998). Through the research's history, trauma has been recognized as being a part of the human experience and needs to be continually explored to find new revelations in the field of study (Courtois, 2002). Understanding the effects of adverse childhood experiences

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could help to decrease the possible health risks throughout an individual's lifespan, including the consequence of an early death (Felitti et al., 1998).

### *Neurobiology of trauma*

Through the continuing developments and understanding of children exposed to trauma, studies have been done on how trauma affects the development of a child's brain at different ages. A study done by Ornitz et al (1996) showed that the brain develops cognitive and emotional function over four critical periods from early childhood to mid-adolescence. Through the developmental shifts in the brain during each stage of childhood, a secondary study by Nadel (2003) showed that after birth a part of the brain called the amygdala, which helps the child to experience fear and analyze danger, begins to function immediately after birth. Another important part of the brain that helps to organize the nature of the threat, called the hippocampus, is shown to be significantly altered when the child goes through abuse, neglect, and other various types of traumas. The prefrontal portion of the brain also contributes to having an impact through high and dysregulation of stress and trauma as the child's brain develops (Kolk, 2003).

Physical brain alterations have been shown due to early trauma. A study, by Bellis and Zisk (2014), showed that memory performance after severe trauma was caused by the volume of white and gray matter in the prefrontal cortex decreased as a result. In addition to the study, children who had been maltreated in early years showed smaller cerebral volumes in the brain, over children who had not been maltreated (Bellis & Zisk, 2014). Through the altering and changing of the brain's structures, has caused negative effects that altered the child's emotional, behavioral, motivation, and cognitive functions that has continued into the individual's adult life (Bellis & Zisk, 2014).

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One of the most important and main biological stress response systems in traumatic experiences, especially during childhood, is the limbic-hypothalamic-pituitary-adrenal (LHPA) axis. The system LHPA axis is a response to physiological and psychological stress that helps to keep the body stable. Due to the child's development of stress response immediately after birth, the understanding of LHPA can help to increase a positive stress response in the development of the child (Vazquez, 1998). When LHPA is activated by stress, it triggers the hypothalamus, a part of the brain that helps to regulate body equilibrium, to secrete a hormone called corticotropin releasing factor (CRF). The CRF is an important mediator by helping the brain to develop a response through the learning and memory that is stored from the traumatic experience. Through the release of CRF, it causes a chain release of other factors that eventually bring the body to homeostasis (Bellis & Zisk, 2014). Cortisol, as the primary stress hormone, is also an important factor in the process by preparing the fight-or flight response by suppressing the immune system, increasing glucose levels and blood pressure in the stress response (Riordan and Davis, 2021).

During the onset of trauma, a theory by McEwen (2007), looks at, "...allostatic load, which hypothesizes that organisms adapt to re-regulate psychobiological responses to chronic stress to prevent physical harm to the organism. Increasing allostatic load over the lifespan, however, increases vulnerability to stress disorders in response to new stressors" (Cozza, 2014, p.190). Through trauma, the CRF levels are found to be elevated in adults who have a history of childhood trauma that has caused Post traumatic stress syndrome (PTSD), anxiety, aggression, depression, and other factors that resulted in the outcome of high stress situations. All the following responses to stress through childhood trauma have shown the damaging consequences

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to the development of the brain and the biological stress systems that greatly influence the maturing of the child (Bellis & Zisk, 2014).

### *Childhood traumas in elite athletes*

The mental health of athletes has become one of the most important and common issues in all levels of participating in sports. A study by Aron et al., (2019) looked how elite athletes have higher rates of mental health disorders than the general population. Aron et al., (2019) used the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 to identify and recognize symptoms of mental health disorders into categories of four. The first being intrusion symptoms, which is when the individual has flashbacks or a recurrence of unwanted memories that can be prolonged or intense from a reminder of the trauma that occurred. Secondly, negative mood and cognitions cause the individual to be unable to remember the traumatic event, feel detached from others, have negatively heightened emotions, and be unable to constitute any kind of positivity towards the traumatic experience. In the third category, the individual shows symptoms of dissociation which causes the individual to have depersonalization, decreased emotional response and awareness, and derealization. The final category is alterations in arousal and reactivity, which can cause the athlete to have problems with sleep, become irritable or aggressive, problems with concentration, and other alterations in the individual's life. Through the impact of early trauma on athletes, it can significantly cause negative sport-related outcomes that affects the dynamics of both the individual and the team (Aron et al., 2019).

### **Childhood trauma and resilience**

According to the CDC, over 60% of adults have experienced traumatic childhood experiences (Houry, 2019). While a common belief is that because of how young some children may be, the chances of being affected by it has minimal risks. With the development of the

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DSM-5, a diagnostic tool developed to identify mental disorders, it shows that the symptoms of trauma in children were being overlooked by the lack of spoken language and various disorders that are a result of the trauma (Ringeisen et al., 2016). The results of adversity during childhood can have negative long-term effects if not properly supported through intervention and healthy recovery (Reuther & Osofsky, 2013). Resilience provides individuals with the mechanics of developing protective factors and a way to navigate through traumatic adversity. Based on the type of trauma, the development of resilience factors will differ both physically and emotionally, especially with multiple adverse experiences (Ungar, 2013).

### *Effects of childhood trauma through the lifespan*

Identifying the symptoms of the effects of adversity and promoting resilience has shown to be incredibly beneficial in emotional and physical developments (Reuther & Osofsky, 2013). Early life adversity (ELA) has shown negative experiences in children, resulting in lifetime consequences in various social and economic outcomes. Berens et al., (2017), states that, "... 44% of children in developed countries and 59% in developing countries had been victims of physical, emotional, or sexual violence or had witnessed domestic or community violence in the preceding year" (para.4). While the factors of childhood treatment can be easily identified, the response and side-effects of the child through adversity becomes more complex and often goes untreated. After a traumatic situation, children have an extremely challenging time identifying, managing, and expressing emotions (Lubit et al., 2003). Due to the development impairments and being unable to express emotions, children who face adversity show higher aggressive, angry, violent, and reactive behaviors (Fox et al., 2015). The child becomes attached to that stressor, which results in intense fears of helplessness and abandonment from the caretaker (Milot et al., 2009). A supporting study on how children respond to adversity, showed that

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children who were abused had drastically worse behaviors with signs of aggression, depression, fear, and being antisocial (Friedrich et al., 1984).

A clinical study by Streek-Fischer & van der Kolk (2000), used a case vignette on an 8-year-old who went through multiple extremely traumatic experiences, which included abuse by the father and neglect by the mother. Behavioral issues began to get worse and by kindergarten, signs and symptoms from the adverse experiences resulted in immediate withdrawal from school and inpatient treatment. Behaviors from the patient included, trance states, retardation in development, extreme lack of age maturity, sleep disturbances, bulimia, restlessness, aggression, and other severe behavioral issues. Through the clinical case, it shows the extreme behavior and developmental hindrances from trauma at an early age and how much it can affect the individual (Streek-Fishcer & van der Kolk, 2000).

The long-term effects of adversity in childhood can impact the individual significantly as an adult. A study by Fischer et al., (2000) stated that around 20% of parents who faced abuse as a child, inflicted abuse on their children. In addition to the following study, those arrested for offenses of violence, showed high numbers of being abused and neglected as a child (Fischer et al., 2000). Adults that show depression, posttraumatic stress disorder (PTSD), and other psychological disorders have all suffered from childhood adverse experiences or potentially traumatic events (PTE's). A study was done that investigated the results of childhood adverse experiences in adult individuals and found that lifetime rape was the most common PTE causing PTSD (Zlotnick et al., 2008). In addition to the findings of the previous study, van der Kolk (2005) found through research that the PTE has more severe effects in adult life than early childhood, due to the physical and emotional developments resulting from multiple traumatic



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experiences (van der Kolk, 2005). – felitts and anda increase rise in alcoholism, health disease chrisis, stds, 1998

### *Development of resilience*

The severity of the trauma affects the development of resilience in individuals, especially through multiple adverse experiences. In the face of trauma, children develop self-protective behaviors, are overstimulated, and prone to a variety of physiological and psychological factors very easily. After going through adversity, children either learn to develop resilience individually or can be taught by an external source, such as therapy or through a peer. Developing resilience in early-life is influenced by several factors, including the family and community. The child depends on a peer or parent for emotional and physical support throughout development and in times of adversity. By having a steady role model, the child can develop trust and safety in the environment, which helps to build positive resilience (Werner, 1995). When teaching the building of resilience, children need to feel a sense of security and predictability. Once the child establishes a safe environment, they can engage in activities and develop their thoughts to a more positive outcome (Fisher & van der Kolk, 2000). Discussed by Sulimani-Aidan (2018), the presence and relationship of a stable caregiver is the most important factor to building early resilience in the child.

While the development of resilience is crucial at an early age, resilience can still be learned and developed as an adult. A study by Ungar (2019) found that some individuals in early adversity, internalize the experience and use later to decide the path their life is going to take. Developing resilience skills and internalizing adversity, is also affected by the ecologies, family, community, and institutions, and the individual's environment. The Adult Resilience measure (ARM) scale was used in a study to measure individuals' ability to cope with adversity or stress

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through the individuals' environments (Clark et al., 2021). The study looked particularly into conflict-related, sexual violence and how the environment helps adults dealing with adversity to continually develop and enable resilience. The social and community relations were shown to be an incredible protective resource for the individual that made them feel safe and to be able to deal with traumatic experiences they were going through. In addition, having a community of culture and social bonds with relationships and friends also showed positive protected resources that helped many of the individuals to be able to navigate and survive through the traumas (Clark et al., 2021). In a supporting study by Smyth and Sweetman (2015), the study showed that women who lived in poverty with constant threats and crises, developed resilience to be able to survive and withstand the threats of their wellbeing. The role of resilience is not only developed through adversities in childhood, but it continues to age in adults over time. Having the social and environmental factors, help to maintain the mental and physical characteristics of high resilience and protective factors through adversity as adults (MacLeod, et al., 2016).

### *Athletes need for resilience*

While the development of resilience is crucial for every individual, it is vitally important for athletes. Athletes face a higher psychological and physical demand of performance in competing in sports. Some of the psychological characteristics of the demands that athletes face in sports participation are, "... effort, struggle, sacrifice, overcoming challenges, rivalry, evaluation, risk of injury, assimilation of defeat, and, in short, facing and overcoming numerous adverse and stressful situations are, to a greater or lesser extent, are inherent to the practice" (Blanco-Garcia et al., 2021, para. 2). A study by Arora (2015) looked further into the extra pressures of college athletes compared to non-athletic students. From the data collected, it shows that there is higher motivation and resilience levels in college athletes over non-athletes. The

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research also found that motivation was higher in athletes due to achieving it in one's community. While athletes are exposed to many challenges within the sport, non-athletes can have a variety of life experiences that enable a wide range of resilience skills for various experiences. Arora (2015) continued by stating that, "...student-athletes spend a considerable amount of time in their sport of choice, thus limiting their overall life experiences" (p. 61).

Understanding and managing college athletes' stressors, through life situations inside and outside of the sport can help with achieving a higher level of motivation and resilience (Arora, 2015).

Along with individual participation, working together as a team can increase or decrease the amount of stress individuals face. The understanding of team support and functioning collectively through shared adverse experiences, show the importance of building and implementing resilience as a group (Morgan et al., 2019). A study by Howe et al., (2012) looked at resilience in various perspectives, which included psychological, sociological, ethical, and moral. One of the findings from the sociological perspective stated that, "Social resilience, which appears to depend on the groups mutual trust and bonds, denotes the ability to absorb such disturbances and rapidly stabilize the unit" (Howe et al., 2012, para 6). In a supporting study that looked at families coping with children's disabilities after birth, Grant & Whittell, 2001, found that some of the families became resilient through each other in the group by building positive resilience to maintain control and understanding through the situations. Athletes, a part of the team, create a team resilience framework that can cope through unique stressors and have high performance levels through the complex demands of the sport. Through team resilience, the vision and purpose become a common ground through adjusting and anticipating stressors in the sport (Morgan et al., 2012).

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While some college athletes have developed the essential resilience skills through learning and retaining coping mechanisms from childhood adversities, others many are not able to bounce back from the adversity in managing the adverse circumstances. The resources of having intervention strategies and counseling for college athletes is crucial for being able to cope with adversity and develop resilience concepts. Chandler et al., (2019), found that some college athletes were not able to handle the stressors of academics and sports, due to the presence of factors from early adverse experiences. Through the findings, a resilience program was created to help the development of resilience and coping with adversity. Individuals were able to open in a safe space about recognizing emotions from the experiences, practicing mindfulness, and learning about resilience building skills (Chandler et al., 2019). The increase of mental health services was also expressed through a study that looked at Reliance and Coping Intervention (RCI). The RCI was implemented to college students the ages of 18-23 at a Midwest University. Using the intervention, strong resilience was shown through the individuals learning how to cope with stress, which decreased depression, anxiety, and other mental health concerns (Houston et al., 2016). Resilience training has shown to enable college athletes with a more positive approach and proper skills in face of adversity and stressful events. Creating adaptive coping strategies, both during and outside of sports, has shown a significant increase in psychological well-being and a decrease in mental health problems. Offering the proper intervention and resilience training programs will help to promote positive ways to deal with stressors through a set of skills that can be adapted towards each experience (Sullivan et al., 2021).

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### Chapter 3

#### Methodology

The information in the following chapter covers the methods and procedures being used in conducting the study.

#### **Research Methodology: Quantitative**

The following research study used a quantitative methodology approach. Quantitative research was defined simply as, "... collecting and analyzing data that is structured and can be represented numerically. One of the central goals is to build accurate and reliable measurements that allow for statistical analysis" (Goertzen, 2017, p.12). In the field of Kinesiology, quantitative research was the most used method by testing the relationship of two variables (Baumgartner et al., 2021). The structure of a quantitative method included using a survey or experiential research, followed by using a specific sample population, study design, collecting and analyzing the data, discussing the results, and using the data to interpret the proposed hypotheses (Creswell & Creswell, 2018). By using quantitative style methods, the research attempted to, "... ensure that his/her explanation for the results can be the only possible or feasible one" (Winter, 2000, p.9).

Quantitative data is found through surveys, questionnaires, or other instruments to gain numerical measures of the two variables being tested. Juanita et al. (2013) stated that quantitative research was the best way to explore new hypotheses or theories to understand the human experience. Through a quantitative approach, data is measured through a variety of methods that included clinical trials, surveys, and cohort studies to determine relationships between variables (Juanita et al., 2013). Using the quantitative method, data is taken from a large sample population and is used to compose a general result for the entire population. Data is processed

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through software, such as Excel or SPSS, to keep partial responses by using mathematics and statistical analysis to generate results from the collection of data (Almelda et al. 2017). By using quantitative methods, the researcher provided valid and meaningful data that contributed to the proposed hypotheses and subject population in the study.

Through a quantitative approach, it was the most effective way to collect data for the study on childhood traumas effects on college athletes' resilience. The purpose for the study was to look at how childhood adversities affected the resilience for college athletes dealing with stressors within the sport. Using a quantitative instrument allowed the researcher to adhere to a larger sample size for more numerical data. Through using the system *Qualtrics*, the survey was administered, and the data was recorded, while remaining confidential. By administering a quantitative approach, the study had conclusive data through a valid instrument that developed information about the effects of childhood trauma on college athletes' resilience.

### **Research Method: Descriptive**

Throughout the use of questionnaires and surveys within the Kinesiology field, descriptive research was the most common approach with topics in sport management, health, and recreation (Baumgartner et al., 2021). Baumgartner et al. (2021), stated that descriptive research, "... is conducted by collecting information and based on that information, describing the situation (p. 21). Descriptive research created a design that helped to describe an emerging phenomenon or event that occurred where little information was understood about it. It is also used for human subjects and not for experimentation within nature (Baumgartner et al., 2021). The common types of descriptive research included, survey, longitudinal study, correlations study, and case studies, all which provided awareness and insight to the given research study (Dulock, 1993). By offering more insight on the characteristics of the variables being tested, the

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research would answer the question of “What is X” (Ivey, 2016). To begin answering that basic research question, descriptive research offered clarification of the characteristics of the phenomenon and ways to compare or test the theory (Ivey, 2016).

Using a descriptive research method for the study helped to collect data from the participants to compare the variables being tested. With a large sample population, using the descriptive method in the form of a survey is the most effective method to collect the amount of data needed for the research (Baumgartner et al., 2021). The surveys used for the study were chosen to best collect the data necessary for the purpose of the study and the population of college athletes. With the amount of the college athlete population and the various schedules, the best way to collect data was through gathering it by a survey. The variables being used could have a description behind why they were being researched. By using descriptive research, the following information for understanding the survey questions about what was going on with the athletes’ past childhood traumas and how it was affecting their resilience participating in sports.

### **Research Technique: Survey**

The type of quantitative research that the study utilized, and the most common descriptive research instrument in kinesiology, was the survey (Baumgartner et al., 2021). Through a survey, the researcher could, “... use scientific sampling and questionnaire design to measure characteristics of the population with statistical precision” (Sukamolson, n.d., p. 4). The survey was developed by the researcher to build a statically valid sampling plan for a large-scale project. Surveys were administered through various methods such as by the phone, personal interview, focus groups, self-administered questionnaire, and distributed questionnaire (Baumgartner et al., 2021). Increased use of the computer via the internet was being used for survey administration and could be completed at a faster response rate (Sukamolson, n.d.).

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Surveys helped to provide information that determined and compared trends, weaknesses, and strengths in various situations that helped to make a generalization and decision about a certain area of research. Most of the survey research used a questionnaire data collecting technique through a series of questions or statements either on paper or online. Questionnaires had classified items that included, open-ended questions, completion items, and multiple choice or closed ended responses. All questionnaires needed to be proven reliable and valid before use (Baumgartner et al., 2021).

The Connor Davidson Resilience scale- 10 (CD-RISC 10) (Appendix E) was used to identify the resilience in athletes (Connor & Davidson, 2003). Connor and Davidson (2003) developed the resilience scale to measure stress coping abilities in order to identify a risk and need for treatment. Through the testing of the reliability and validity of the study, the CD-RISC had found sound psychometric properties that demonstrated resilience was modifiable and could be seen to improve through treatments (Connor & Davidson, 2003). A study that investigated the validity of the CD-RISC through Portugal participants, measured it with psychosocial and biomedical measures. The study concluded that the CD-RISC was a good fit and validation of the measure of stress, mental and physical life, and life satisfaction (Anjos et al., 2019). In another validation study, a Russian youth sample was taken by Nartova-Bochaver et al. (2021), that identified the structural and convergent validity of psychological well-being and negative connections. Through the study, the CD-RISC was also found to be valid, reliable, and stable for various areas of research (Nartova-Bochaver et al., 2021).

The Adverse Childhood Experiences questionnaire (ACE) (Appendix F) was conducted in the mid-1990s by the CDC and Kaiser Permanente's (Felitti et al. 1998). The questionnaire was first used in the study by Permanent to identify how the trauma from childhood negatively



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affected adults' health and well-being (Felitti et al. 1998). Through the study, a link was found that identified a link with trauma and chronic disease, incarceration, and employment changes as negative outcomes from childhood adversities (Adverse childhood experiences, n.d.). As the validity of the study was tested, the ACE questionnaire was expanded through studies, like The Philadelphia ACE Project. The ACE project of Philadelphia expanded the measures of the study, not only to look at abuse, neglect, and household dysfunctions, but exposure to racism, family adversity, living in foster care, neighborhood safety, bullying, and community violence (The Health Federation of Philadelphia, 2020). In a supporting study by the adverse childhood experiences, human trafficking of minors and childhood adversity in Florida was a study developed in 2017 to test the validity of the ACE questionnaire, but also identify the higher ACE scores and how that affected the long-term challenges in adults from childhood adversities (Adverse childhood experiences, n.d.).

### **Target Population and Sampling Method**

With a large sample size for the population, the researcher needed to identify the target population and used a portion size of that population that was accessible (Baumgartner et al., 2021). The target population identified for this study included NCAA Division II and NAIA college athletes that attend a small public and private universities in the southeast of the United States. The sample size from the target population of college athletes was from a small Division II university in North Carolina and a small private university in central Florida. The population of college athletes at the universities was due to convenience sampling by being the most accessible to the researcher. Convenience sampling was an effective approach in selecting the participants for the study based on the convenience and accessibility to the researcher (Baumgartner et al., 2021). Due to attending and working at both universities, the researcher had

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access to the college athlete population for the study and the coaching staff to allow the time for the data collection.

### **Instrument and Techniques for Measurement**

The study used two instruments that had been proven valid throughout previous research. The instruments used were the ACE questionnaire and CD-RISC. Both contributed to the study by identifying early childhood adversity and the amount of resilience the college athletes had during stressful experiences. The initial section of the survey began with demographic questions (Appendix D) (i.e., age, gender, ethnic identity, race, and sport affiliation). Following the demographic section, was a close ended survey that began with a condensed ten question version of the CD-RISC. The CD- RISC-10 scale contained items that measured the college athlete's ability to bounce back from adverse life experiences with resilience. Following the CD-RISC-10, the ACE questionnaire was given to the athletes, which contained 10 items that identified personal and family member traumatic experiences that occurred prior to the participants 18<sup>th</sup> birthday.

The CD-RISC 10 item scale had been used to examine psychometric properties through the individual's ability to show resilience through adversity. A study was done that looked at the validity of the original 25 question CD-RISC to the condensed version that contained 10 items. By using the response scale, a five point range from 0 (not true at all) to 4 (true nearly all the time), the scores showed that the CD-RISC 10 item scale had high psychometric properties that confirmed its reliability and validity (Kuiper et al., 2019). The validity of the CD-RISC 10 item version was confirmed through a study by Gonzalez et al (2016) that used the population of American distance runners, who also found that the ten-item scale was superior to the 25-item scale.

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The ACE 10 item questionnaire was used to look at traumatic events or experiences in childhood (0-17) years, like abuse, neglect, violence, or substance abuse (CDC, 2021). The questionnaire used 10 items that identified different types of childhood traumas and came up with a score that identified a high or low risk of future health problems. ACE had been a well-established survey that asked about the most prevalent forms of diagnosing childhood traumas. For example, ACE asked the question:

Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

The type of trauma that the question insinuates was sexual abuse as a child from a mother or stepmother. If the participant answered Yes, that would identify that individual being a victim of childhood sexual or physical abuse. The validity of the ACE questionnaire had been shown throughout research both remote and internationally in various studies, that allowed researchers to identify indicators in assessing childhood maltreatment (Kidman et al., 2019; King, 2020; Koita et al., 2018; Wingenfeld et al., 2010).

The CD-RISC used a 10 item self-reporting scale with items on a 5-point Likert scale. The 5-point range of responses were from *not true at all*, *rarely true*, *sometimes true*, *often true*, and *true nearly all the time*. All individual responses were scored by a minimum of 0 and a maximum of 40 total points, from each numerical point value (0-4). Gonzolaz et al (2016) stated that the higher the numerical score, the higher amount of resilience the individual possessed. The ACE questionnaire used ten items to measure childhood trauma. The questionnaire used a Likert scale (1-10) and ranged from *Yes* and *No* responses. Felitti et al (1998) stated that a score from 1-

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3 on the ACE reflected an intermediate risk for toxic stress, while a score of 4 or higher showed that the participant was at high risk.

### **Data Collection Design**

Once Institutional Review Board (IRB) approval was given at both universities (Appendix G and H), the researcher sent out an email to all the coaches, introducing the process of the study and asked permission to administer the survey to the teams and give the option to participate in the survey. Once administered to the teams, the researcher administered the survey script to the athletes, that gave a brief description of the study, disclosing the possible risks, and asked for voluntary participation (Appendix B). After the participants have given voluntary participation, the researcher gave a Title IX exemption form at the beginning of the survey (Appendix C), disclosing sexual abuse, which was contained in one of the survey questions. The researcher disclosed that she would not be reporting to the Title IX office based on the participation and answers to the survey questions within the study. After the required forms were disclosed, the survey, via *Qualtrics*, was administered to the athletes to access the survey from either a computer or phone.

The researcher administered the survey to the college athlete participants during the spring and fall semester of 2022. The survey took less than ten minutes to complete. The researcher thanked the athletes who participated for their time, as well as the coaches that allowed time for the athletes to participate in their schedules.

### **Data Collection and Recording Procedures**

The survey was administered through *Qualtrics*. The *Qualtrics* system gathered and recorded the data from the responses of the college athlete participants. According to UNC-Pembroke (n.d.), *Qualtrics* is an "... online survey and polling software package that contains a

## CHILDHOOD TRAUMA AND RESILIENCE

variety of question types and formatting; offers survey logic and customizable deployment capabilities (including reminder emails) and has a powerful reporting engine” (para 1).

*Qualtrics* is accessible to all students in a class or research setting at the universities.

Once the data is collected from the survey in *Qualtrics* and was further analyzed in an Excel sheet. All the data collected is based on the two survey instruments administered, CD-RISC-10 and ACE, and the scores were identified for each athlete. The data is organized starting with the five demographic questions first, to use in hypothesis testing later in the study and is followed by the ten items of the resilience scale and ten items of the childhood trauma questionnaire. All the data organized by *Qualtrics* is exported to Excel for further analysis testing.

### **Data Analysis Procedures**

The data collected from the study administered through *Qualtrics*, was exported, and analyzed through an Excel spreadsheet. All data is collected and analyzed from the study that included demographic questions, CD-RISC 10 question scale, and ACE questionnaire. The hypotheses testing was analyzed and explained using the statistical analysis tools in Excel. Each hypothesis was tested using t-test and correlation testing, all found in the data analysis toolpak in Excel.

### **Pilot Test**

A pilot test was administered to the graduate students of the Principles of Leadership class at UNCP, along with additional participants that included friends and family. The test participants included five male non-athletes and ten female non-athletes. No participants from the student-athlete population were involved in the pilot test. All participants who volunteered reviewed a Title IX debrief form before taking the survey. Once reviewed, the participants completed a series of five demographic items, ten questions from the CD-RISC scale, and ten

## CHILDHOOD TRAUMA AND RESILIENCE

items from the ACE questionnaire. Revisions were made after the completed pilot test before the main study was administered to the student-athletes.

### Chapter 4

The study was administered to determine the effects of childhood trauma on college athletes. This chapter identified the participants involved in the study and the demographics of the student athletes. **H1:** There is no statistically significant relationship between childhood trauma scores and resilience scores in college athletes. **H2:** There is no statistically significant difference between resilience scores based on gender. **H3:** There is no statistically significant difference between childhood trauma scores based on gender.

#### Participant Profile

The participants included in the study were college student-athletes at small Division II NCAA university and small, southern NAIA university. Every college athlete was invited to voluntarily participate in the study. Of the 980 students invited to participate in the study, 295 (30.1%) voluntary participants completed the survey's.

**Table 4.1**

*Survey Response and Exclusions*

<b>Response Rate</b>	
Survey Response	295
Excluded Responses	58
Analyzed Responses	237

## CHILDHOOD TRAUMA AND RESILIENCE

Table 4.1 displays the survey responses and exclusions from the data analysis. A total of 295 responses were submitted to the survey. There were 58 responses to the survey that were excluded due to being incomplete in multiple sections and pulled from data analysis.

**Table 4.2**

*Demographic characteristics for survey population*

Baseline characteristic	Full sample	
	n	%
<b>Gender</b>		
Female	134	56.5
Male	102	43.0
Non-binary or other gender not listed	1	0.4
Prefer not to respond	0	0
<b>Age</b>		
18	66	27.8
19	51	21.5
20	35	14.8
21	30	12.7
22+	55	23.2
<b>Ethnicity</b>		
Hispanic/ Latino	42	17.7
Non-Hispanic/ Latino	195	82.3
<b>Race</b>		
African American/ Black	71	30.0
Asian/ Pacific Islander	2	0.84
Indigenous/ Native American	13	5.49
White	116	48.95
Multiracial	21	8.86
Not listed here (please specify)	8	3.38

## CHILDHOOD TRAUMA AND RESILIENCE

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Prefer not to respond	6	2.53
University Affiliation		
University of North Carolina-Pembroke	117	49.37
Warner	120	50.63
Sport Affiliation		
Baseball	5	2.11
Basketball-Men's	2	0.84
Basketball- Women's	29	12.24
Cheer	1	0.42
Clay Targets	0	0
Flag Football	21	8.86
Football	55	23.21
Golf	3	1.27
Lacrosse-Women's	7	2.95
Soccer- Men's	28	11.81
Soccer-Women's	10	4.22
Softball	16	6.75
Spirit Squad	0	0
Swimming/ Diving	2	0.84
Track & Field/ Cross Country- Men's	4	1.69
Track & Field/ Cross Country- Women's	5	2.11
Volleyball- Men's	10	4.22
Volleyball- Women's	18	7.59
Wrestling	21	8.86

---

*Note:* n=number, percentage of characteristic group

The following table represents the demographics of the reported responses of the population. The largest gender group stated was the *Female* category with 56.5% (134). Following was the *Male* at 43.0% (102), *Non-binary or other gender not listed* 0.4% (1), and the lowest category being *Prefer not to respond* 0% (0). Of the age categories from 18 to 22+, 18-



## CHILDHOOD TRAUMA AND RESILIENCE

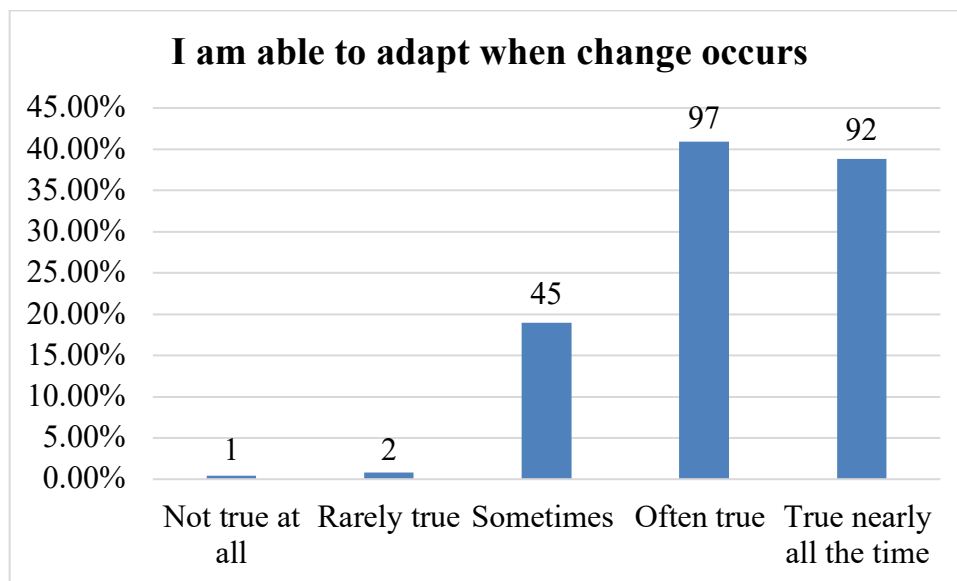
*year-old* had the largest response 27.8% (66). Following the largest response is the age *22 or older* 23.2% (55), *19* 21.5% (51), *20* 14.8% (35). The smallest category for responses were *21* 12.7% (30). Table 4.5 displays the ethnic identify responses reported. Of the two categories listed, the largest was *Non-Hispanic/Latino* 82.3% (195) and the smallest being *Hispanic/Latino* 17.7% (42). The highest response rate for the category race was *White* 48.95% (116), followed by *African American Black* 30.0% (71), *Multiracial* 8.86% (21), *Indigenous/ Native American* 5.49% (13), *Not listed here (please specify)* 3.38% (8). The smallest category was *Asian/Pacific Islander* 0.84% (2). The largest sport response category was *Football* 23.21% (55), followed by *Basketball-Women's* 12.24% (29), *Soccer-Men's* 11.81% (28), *Wrestling* 8.86% (21), *Flag Football* 8.86% (21), *Volleyball-Women's* 7.59% (18), *Softball* 6.75%, *Soccer-Women's* 4.22% (10), *Lacrosse- Women's* 2.95% (7), *Baseball* 2.11% (5), *Track & Field/Cross Country-Women's* 2.11% (5), *Track & Field/Cross Country-Men's* 1.69% (4), *Golf* 1.27% (3), *Swimming/Diving* 0.84% (2), *Basketball-Men's* 0.84% (2), *Cheer* 0.42% (1). The two smallest categories reported were *Clay Targets* 0% (0) and *Spirit Squad* 0% (0). *Rate of response for survey population.* Out of the college athletes that voluntarily participated in the study from a small Division II NCAA university and NAIA school in the south, 49.37% (117) participants from the Division II NCAA and 50.63% (120) participants from the NAIA university responded to the survey link via *Qualtrics*.

## CHILDHOOD TRAUMA AND RESILIENCE

## Frequency Data

Figure 4.1

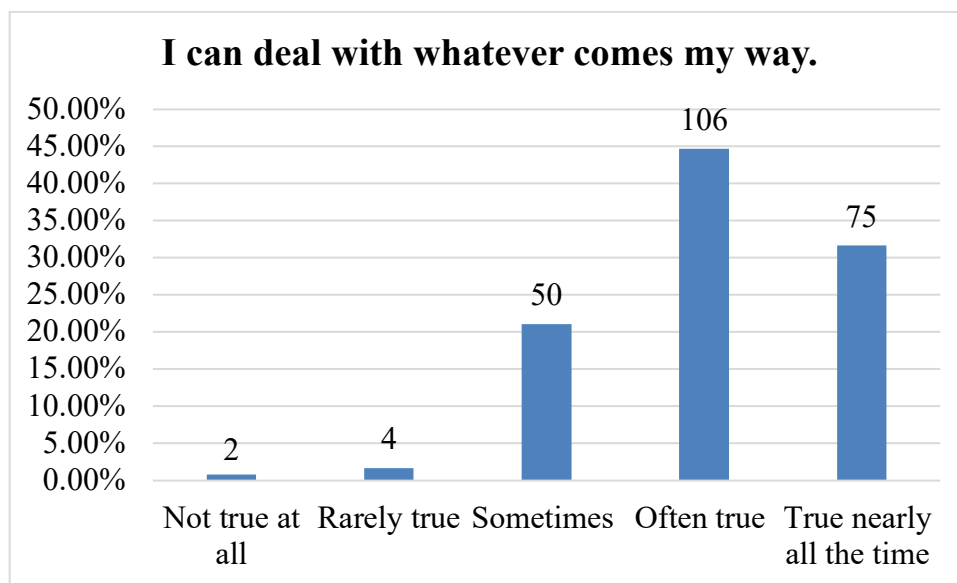
**Resilience: I am able to adapt when change occurs**



*Figure 4.1* Percentage of the participants' resilience related to adapting when change occurs.

Figure 4.1 represents the participants' responses for the reported resilience for adapting when change occurs in various circumstances. The participants responded to the statement; *I am able to adapt when change occurs*. The largest response was *Often true* 40.93% (97), followed by *True nearly all the time* 38.82% (92), *Sometimes* 18.99% (45), *Rarely true* 0.84% (2). The smallest response reported was *Not true at all* 0.42% (1). The following figure shows that most participants were able to adapt when change occurs.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.2****Resilience: I can deal with whatever comes my way**

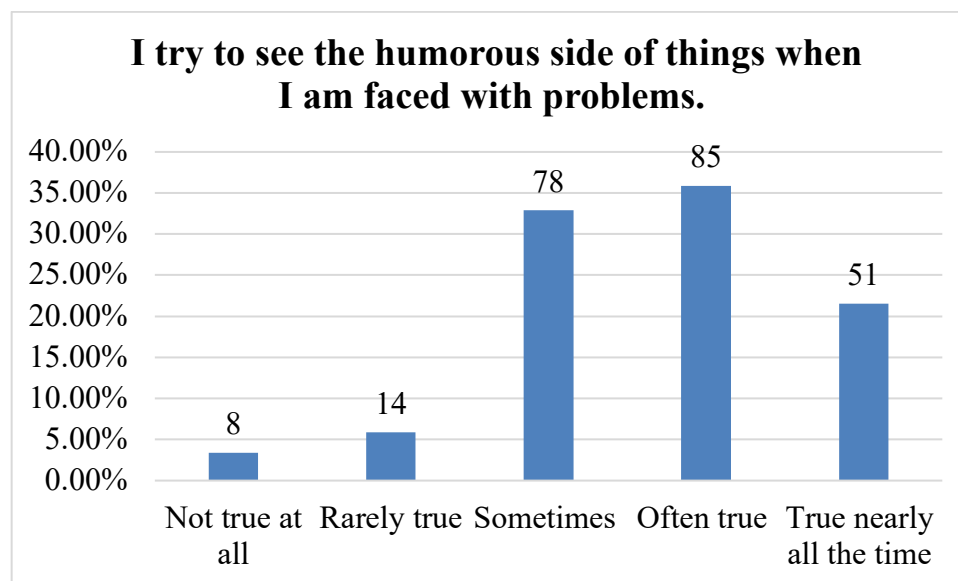
*Figure 4.2* Percentage of participants' resilience to deal with factors that come in their way.

Figure 4.2 displays the responses from the participants on dealing with whatever comes their way. The participants responded to the statement; *I can deal with whatever comes my way*. The largest recorded response was *Often true* 44.73% (106), followed by *True nearly all the time* 31.65% (75), *Sometimes* 21.10% (50). The smallest two response category were *Rarely true* 1.69% (4) and *Not true at all* 0.84% (2). With the figure, it shows that most of the participants were able to deal with whatever came their way.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.3**

**Resilience: I try to see the humorous side of things when I am faced with problems.**



*Figure 4.3* Percentage of participants' response to facing problems with humor.

Figure 4.3 displays the responses from the participants on the resilience response of finding the humorous side of things when faced with problems. The participants responded to the statement; *I try to see the humorous side of things when I am faced with problems*. The largest recorded response was *Often true* 35.86% (85), followed by *Sometimes* 31.65% (75), *True nearly all the time* 21.10% (50). The smallest two response categories were *Rarely true* 1.69% (4) and *Not true at all* 0.84% (2). With the figure, it shows that most of the participants were able to deal with whatever came their way.

## CHILDHOOD TRAUMA AND RESILIENCE

Figure 4.4

**Resilience: Having to cope with stress can make me stronger.**

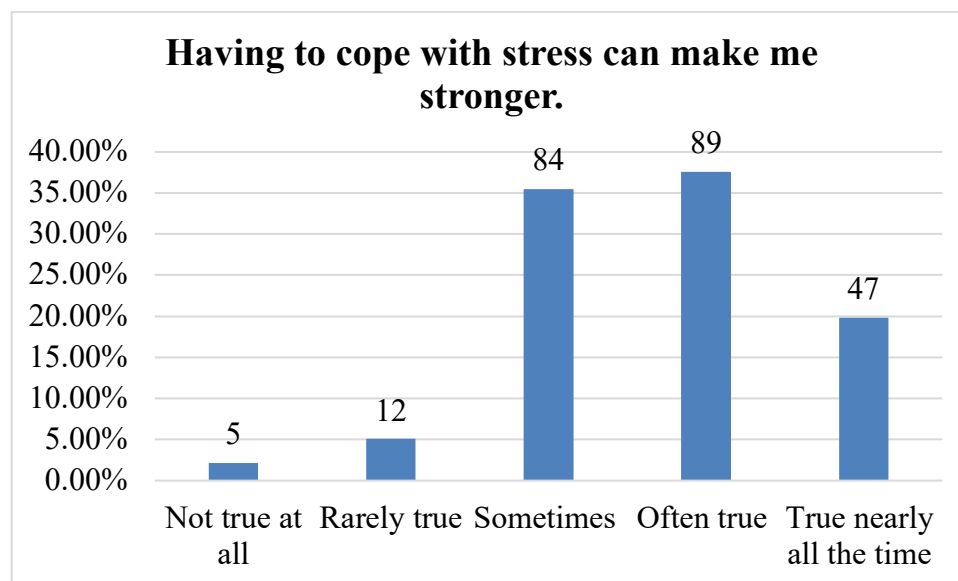


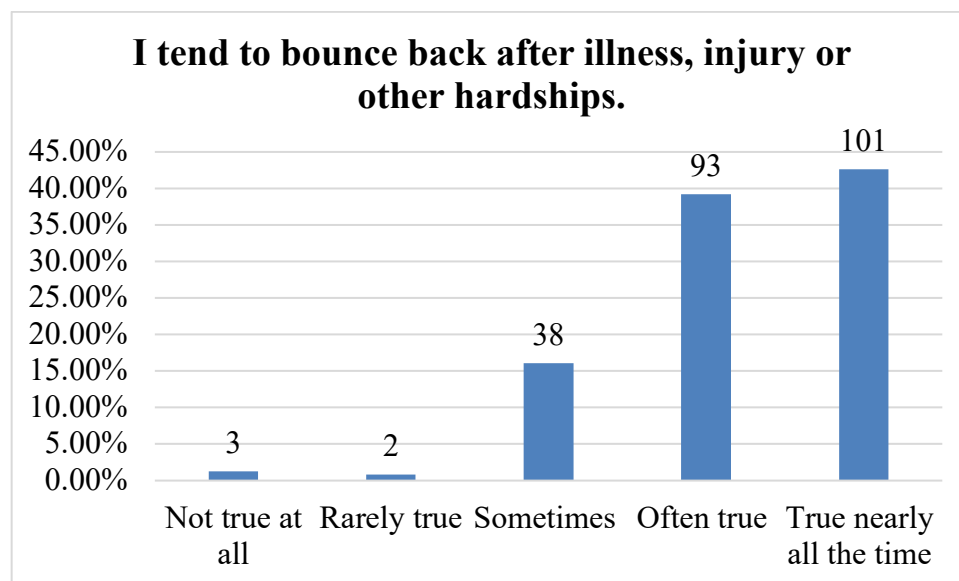
Figure 4.4 Percentage of participants' response to resilience in coping with stress.

Figure 4.4 displays the responses from the participants on resilience through coping with stress to be stronger. The participants responded to the statement; *Having to cope with stress can make me stronger*. The largest recorded response category was *Often true* 37.55% (89), followed by *Sometimes* 35.44% (84), *True nearly all the time* 19.83% (47). The smallest two response categories were *Rarely true* 5.06% (12) and *Not true at all* 2.11% (5). With the following figure, it shows that more participants agree and/or were neutral with being stronger when coping with stress.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.5**

**Resilience: I tend to bounce back after illness, injury, or other hardships.**



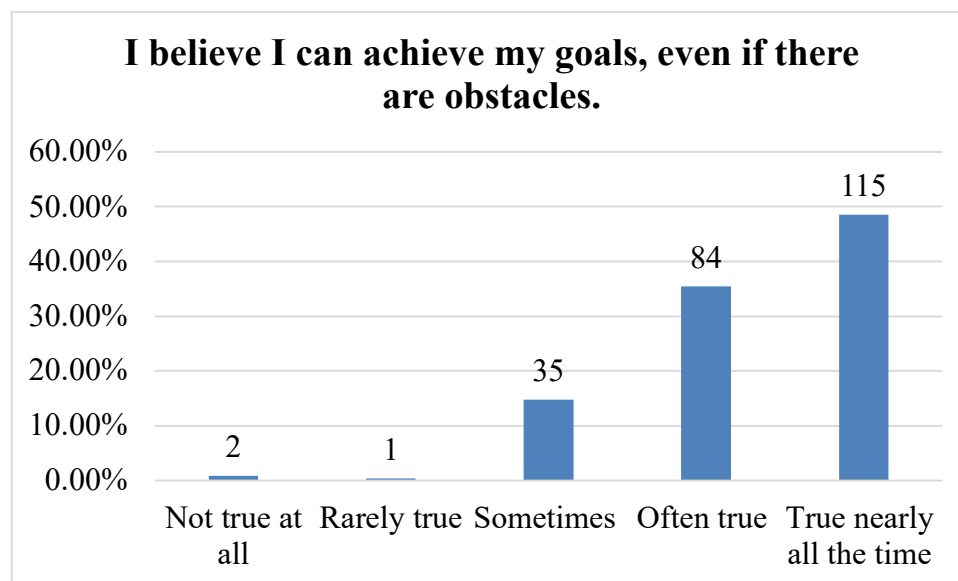
*Figure 4.5* Percentage of participants' response of resilience in bouncing back from hardships.

Figure 4.5 displays the response from the participants' resilience through bouncing back after illness, injury, or other hardships. The participants responded to the statement; *I tend to bounce back after illness, injury, or other hardships*. The largest recorded category was *True nearly all the time* 42.62 % (101), followed by *Often true* 39.24% (94), *Sometimes* 16.03% (38). The smallest two response categories were *Not true at all* 1.27% (3) and *Rarely true* 0.84% (2). With the figure, it shows that most of the responses reflected individuals being able to bounce back after illness, injury, or other hardships.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.6**

**Resilience: I believe I can achieve my goals, even if there are obstacles.**



*Figure 4.6* Percentage of participants' response to achieve goals with obstacles.

Figure 4.6 displays the response from the participants' resilience through achieving goals even with obstacles. The participants responded to the statement; *I believe I can achieve my goals, even if there are obstacles*. The largest recorded category was *True nearly all the time* 48.52% (115), followed by *Often true* 35.44% (84), *Sometimes* 14.77% (35). The smallest two response categories were *Not true at all* 0.84% (2) and *Rarely true* 0.42% (1). With the figure, it showed that most participants believe even with obstacles they were able to achieve goals.

## CHILDHOOD TRAUMA AND RESILIENCE

Figure 4.7

**Resilience: Under pressure, I stay focused and think clearly.**

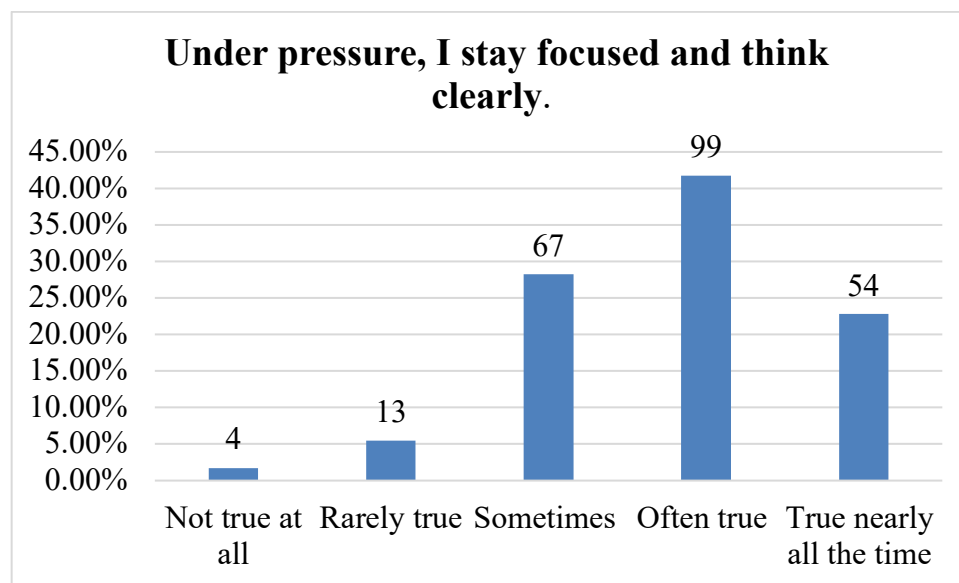
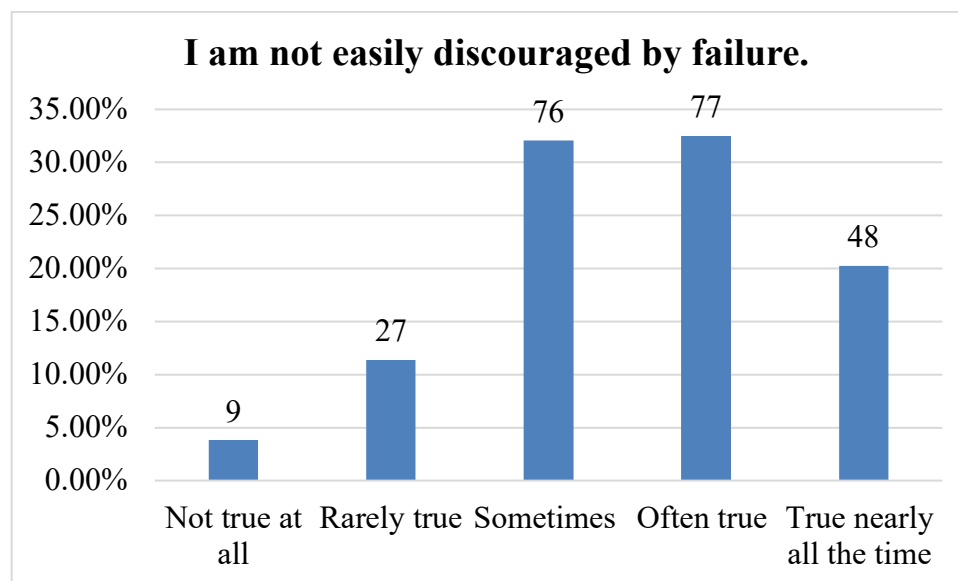


Figure 4.7 Percentage of participants' resilience in response to focus and thinking under pressure.

Figure 4.7 represents the response from the participants' resilience through staying focused and thinking clearly under pressure. The participants responded to the statement; *Under pressure, I stay focused and think clearly.* The largest recorded response was *Often true* 41.77% (99), followed by *Sometimes* 28.27% (67), *True nearly all the time* 22.78% (54), *Rarely true* 5.48% (13). The lowest response rate was *Not true at all* 1.69% (4). The figure showed that most participants were able to stay focused and think clearly under pressure.



## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.8****Resilience: I am not easily discouraged by failure.**

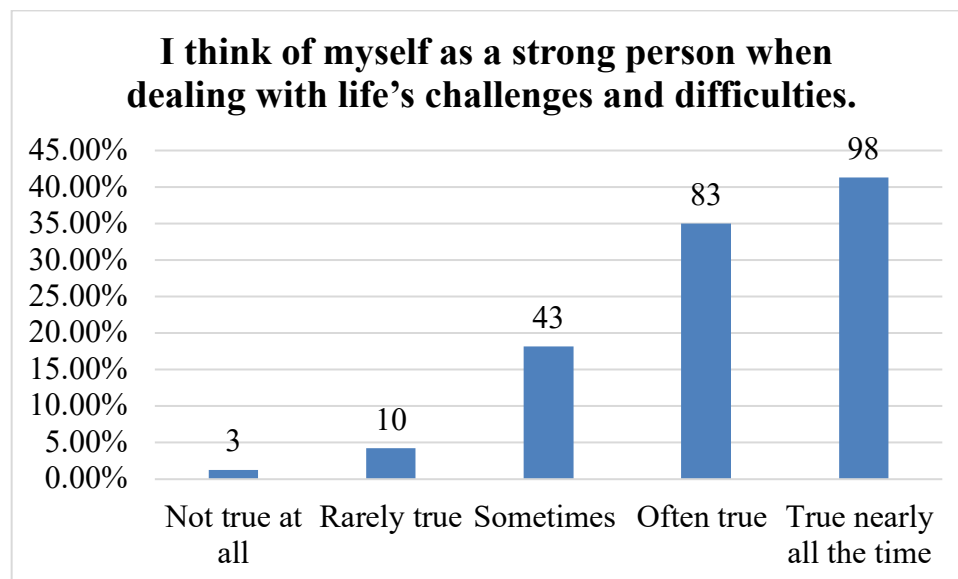
*Figure 4.8* Percentage of participants' resilience in response to not being discouraged by failure.

Figure 4.8 represents the responses reported on not being easily discouraged by failure. The participants responded to the statement; *I am not easily discouraged by failure*. The most frequently recorded response was *Often true* 32.49% (77), followed by *Sometimes* 32.07% (76), *True nearly all the time* 20.25% (48), *Rarely true* 11.39% (27). The lowest response rate was *Not true at all* 3.80% (9). The figure showed that most responses reflected the participants not being easily discouraged by failure.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.9**

**Resilience: I think of myself as a strong person when dealing with life's challenges and difficulties.**



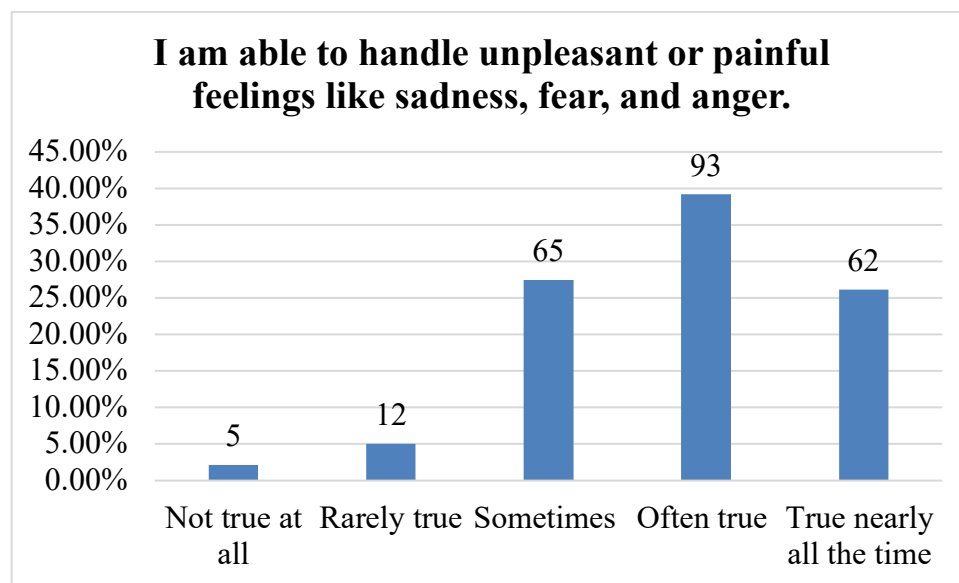
*Figure 4.9* Percentage of participants' response to being a strong person through life's difficulties.

Figure 4.9 represents the responses reported on being a strong person when dealing with life's challenges and difficulties. The participants responded to the statement; *I think of myself as a strong person when dealing with life's challenges and difficulties*. The most frequently recorded response was *True nearly all the time* 41.35% (98), followed by *Often true* 35.02% (83), *Sometimes* 18.14% (43), *Rarely true* 4.22% (10). The lowest response rate was *Not true at all* 1.27% (3). The figure showed that most participants' responses was to think of themselves as a strong person when dealing with life's challenges and difficulties.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.10**

**Resilience: I am able to handle unpleasant or painful feelings like sadness, fear, and anger.**



*Figure 4.10* Percentage of participants' responses to being able to handle unpleasant or painful feelings.

Figure 4.10 represents the participant responses on being able to handle unpleasant or painful feelings like sadness, fear, and anger. The participants responded to the statement; *I am able to handle unpleasant or painful feelings like sadness, fear, and anger.* The most frequently recorded response was *Often true* 39.24% (93), followed by *Sometimes* 27.43% (65), *True nearly all the time* 26.16% (62), *Rarely true* 5.06% (12). The lowest response rate was *Not true at all* 2.11% (5). The figure showed that a large portion of participants responded to being able to handle unpleasant or painful feelings like sadness, fear, and anger.

## CHILDHOOD TRAUMA AND RESILIENCE

Figure 4.11

## Childhood Trauma: Parent or other adult verbal abuse

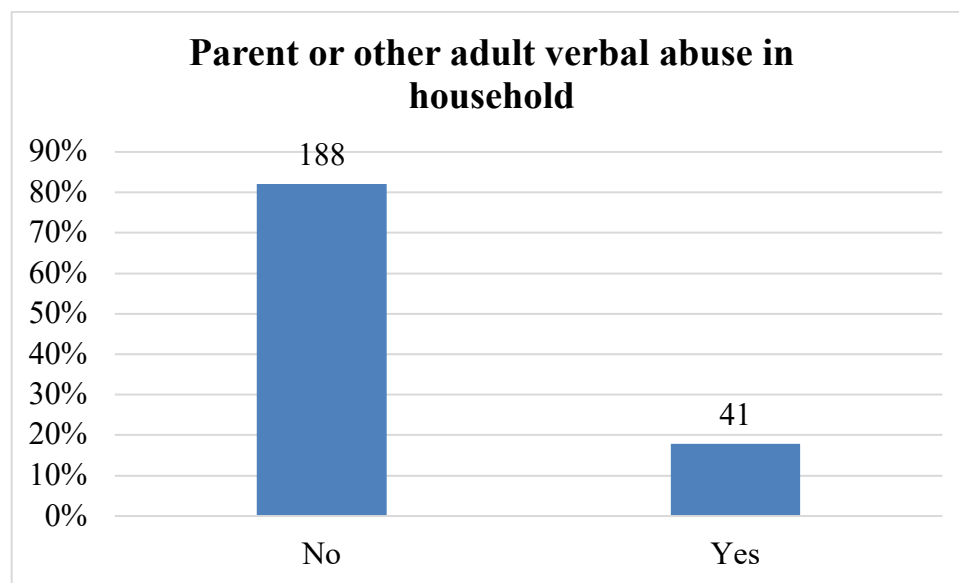
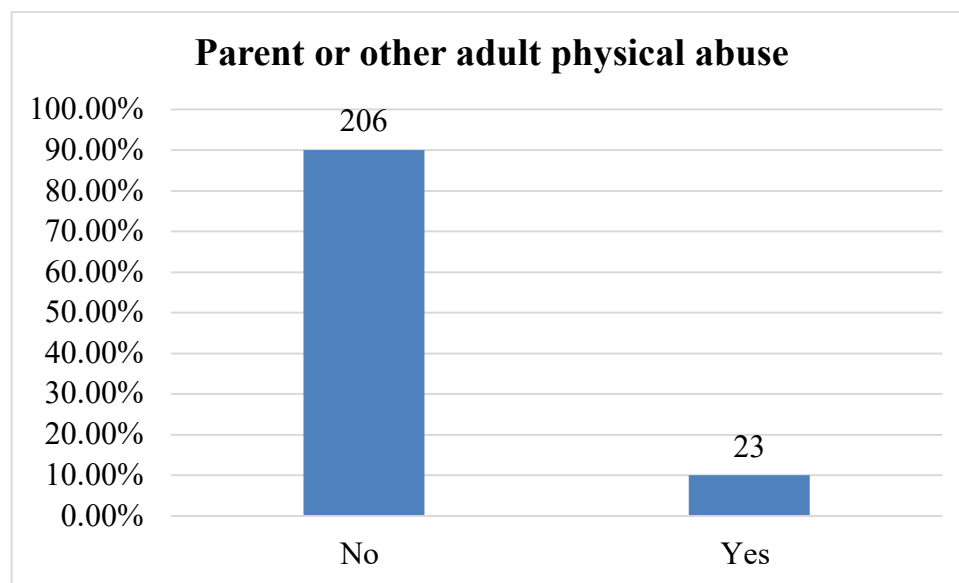


Figure 4.11 Percentage of respondents that faced verbal abuse from parent or another adult in the household.

Figure 4.11 represents the participant responses on a parent or other adult in the household swearing, insulting, putting down, humiliating, or making them feel afraid to be physically hurt. The participants responded to the question; *Did a parent or other adult in the household often or very often... Swear at you, insult you, put you down, or humiliate you? or act in a way that made you afraid that you might be physically hurt.* The most recorded response was *No* 82.10% (188), followed by the lower response rate of *Yes* 17.90% (41). The figure displayed that most respondents did not experience a parent or other adult verbally abuse them in the household.

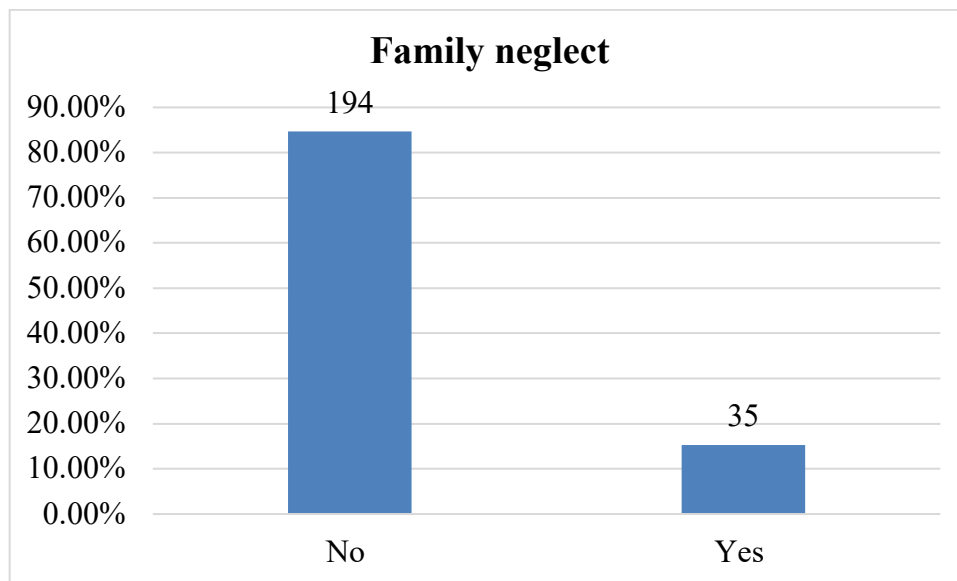
## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.12****Childhood Trauma: Parent or other adult physical abuse**

*Figure 4.12* Percentage of respondents that faced verbal abuse from parent or another adult in the household.

Figure 4.12 displays the participant responses on a parent or other adult in the household often push, grab, slap, throw, or hit so hard marks or injury occurred. The participants responded to the question; *Did a parent or other adult in the household often or very often... Push, grab, slap, or throw something at you? or ever hit you so hard that you had marks or were injured?* The most frequently recorded response was *No* 89.97% (206), followed by the lower response rate of *Yes* 10.04% (23). The figure displayed that most respondents did not experience parent or other adult physical abuse in the household.

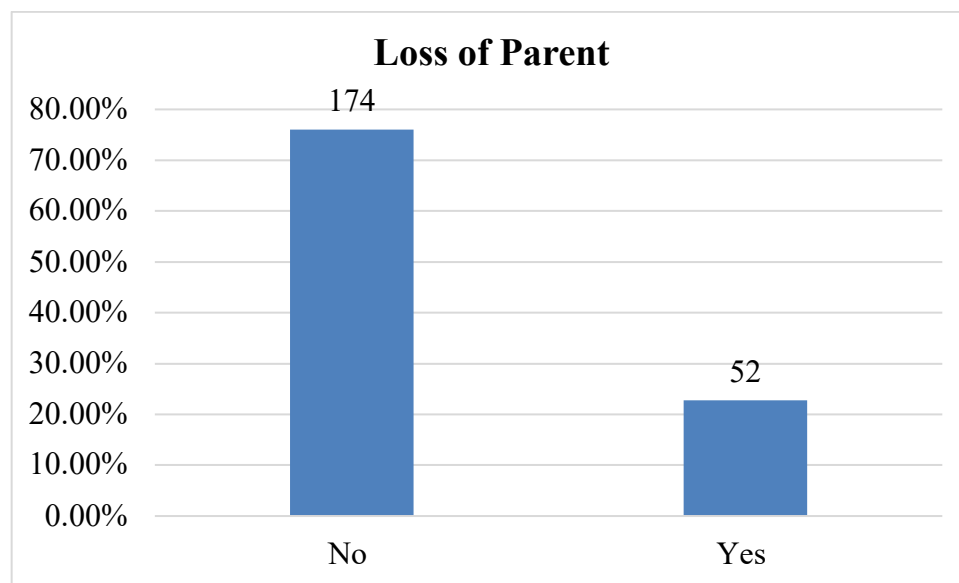
## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.13****Childhood Trauma: Family neglect**

*Figure 4.13* Percentage of respondents that faced neglect from family.

Figure 4.13 displays the participant responses of facing family neglect from not feeling loved, important, special, lack of support, or being close to one another. The participants responded to the question; *Did you often or very often feel that ... No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?* The most frequently recorded response was *No* 84.72% (194), followed by *Yes* 15.28% (35). The figure displayed that most respondents did not experience family neglect and feelings of not being loved, important, special, lacked support, or being close to one another within the family.

## CHILDHOOD TRAUMA AND RESILIENCE

**Figure 4.14****Childhood Trauma: Loss of Parent**

*Figure 4.14* Percentage of respondents that faced abandonment from a biological parent.

Figure 4.14 represents the following responses to losing a biological parent through divorce, abandonment, or other reason. The participants responded to the question; *Was a biological parent ever lost to you through divorce, abandonment, or other reason?* The most frequently recorded response was *No* 75.98% (174), followed by *Yes* 22.71% (52). The figure represented shows that most participants have not experienced the loss of a biological parent.

## CHILDHOOD TRAUMA AND RESILIENCE

**Hypothesis Testing**

**H1:** There is no statistically significant relationship between childhood trauma scores and resilience scores in college athletes.

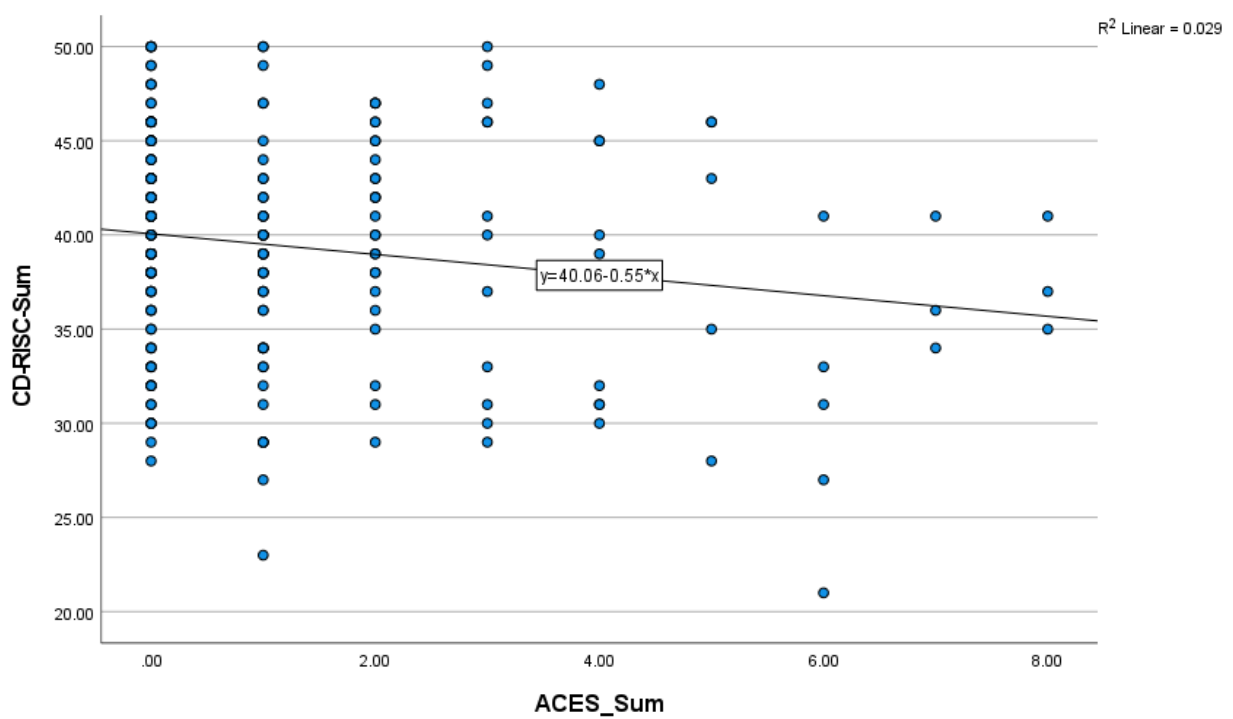
**Table 4.3**

		<b>CD-RISC-Sum</b>	<b>ACE_Sum</b>
CD-RISC-Sum	Pearson Correlation	1	-0.004
	Sig. (2-tailed)		0.956
	N	237	237
ACE_Sum	Pearson Correlation	-0.004	1
	Sig. (2-tailed)	0.956	
	N	237	237



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**Table 4.4**



Note: R<sup>2</sup> value= 0.029%, 0.05 level of alpha at testing, p= less than .01

**Table 4.5**

t-Test: Paired Two Sample for Means

	ACES	CD-RISC
Mean	1.20084388	43.3037975
Variance	3.10491454	53.6954516
Observations	237	237
Pearson Correlation	-0.0004794	
Hypothesized Mean Difference	0	
df	236	
t Stat	-85.993148	
P(T<=t) one-tail	1.91E-180	
t Critical one-tail	1.65133585	
P(T<=t) two-tail	3.819E-180	
t Critical two-tail	1.97006685	

Table 4.3 and 4.4 display the results from the correlation test to determine if there was a statistically significance to the relationship between childhood trauma scores and resilience

## CHILDHOOD TRAUMA AND RESILIENCE

scores in college athletes. Table 4.5 displays the means for the ACE questionnaire (M= 1.20) and CD-RISC-10 (M=3.30). The correlation was used to determine a relationship between the CD-RISC-10 and ACE questionnaires. The sample of 237 participants' data was calculated through a bivariate (Pearson) correlation. The relationship was not found statistically significant with the two tailed value being 0.956.

**H2:** There is no statistically significant difference in resiliency scores based on gender of college athletes.

**Table 4.6**

*t-Test: Two-Sample Assuming Equal Variances*

	<i>Females</i>	<i>Males</i>
Mean	30.4661654	34.2884615
Variance	48.3264981	40.7897685
Observations	133	104
Pooled Variance	45.0231655	
Hypothesized Mean Difference	0	
df	235	
t Stat	-4.3518572	
P(T<=t) one-tail	1.0071E-05	
t Critical one-tail	1.65136354	
P(T<=t) two-tail	2.0143E-05	
t Critical two-tail	1.97011006	

**Table 4.7**

*Descriptive Statistics*

<i>Females</i>		<i>Males</i>	
Mean	30.4661654	Mean	34.2884615
Standard Error	0.60279111	Standard Error	0.62626617
Median	32	Median	34

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Mode	34	Mode	34
Standard Deviation	6.95172626	Standard Deviation	6.38668682
Sample Variance	48.3264981	Sample Variance	40.7897685
Kurtosis	1.98869105	Kurtosis	-0.6569264
Skewness	-0.9041122	Skewness	-0.3972492
Range	44	Range	24
Minimum	0	Minimum	20
Maximum	44	Maximum	44
Sum	4052	Sum	3566
Count	133	Count	104

Table 4.6 represents the reported results from the independent t-test with equal variances to determine a statistically significance difference in *resilience scores* based on the *gender of college athletes*. Table 4.7 represents the descriptive statistics of the genders based on the resilience scores. The calculated *t* value was significant to the statistical level, with  $t(235) = -4.3519, p < .05$ . The *p* value ( $p = .00000201$ ) is less than the alpha value of .05. The mean score for Males ( $M = 32.29, s = 6.39$ ) is higher than the mean for Females ( $M = 40.45, s = 6.95$ ). Due to the results, the hypothesis was rejected due to the consequential relationship between gender's influence on resilience as a college athlete.

**H3:** There is no statistically significant difference in childhood trauma scores based on gender of college athletes.

**Table 4.8**

t-Test: Two-Sample Assuming Equal Variances

	<i>Females</i>	<i>Males</i>
Mean	1.15789474	1.25576923
Variance	2.87033493	3.43025765
Observations	133	104
Pooled Variance	3.11574787	
Hypothesized Mean Difference	0	
df	235	

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t Stat	-0.4236007
P(T<=t) one-tail	0.33612224
t Critical one-tail	1.65136354
P(T<=t) two-tail	0.67224447
t Critical two-tail	1.97011006

**Table 4.9***Descriptive Statistics*

<i>Females</i>		<i>Males</i>	
Mean	1.15789474	Mean	1.25576923
Standard Error	0.14690632	Standard Error	0.1816129
Median	1	Median	0
Mode	0	Mode	0
Standard Deviation	1.69420628	Standard Deviation	1.85209548
Sample Variance	2.87033493	Sample Variance	3.43025765
Kurtosis	4.24066086	Kurtosis	2.9005011
Skewness	2.0150801	Skewness	1.82174557
Range	8	Range	8
Minimum	0	Minimum	0
Maximum	8	Maximum	8
Sum	154	Sum	130.6
Count	133	Count	104

Table 4.5 displays the reported results from the independent t-test with equal variances to determine if there was a significant difference between *childhood trauma scores* based on the *gender of college athletes*. Table 4.6 represents the descriptive statistics of the genders based on the childhood trauma scores. The calculated *t* value was not significant to the statistical level, with  $t(235) = -0.424, p < .05$ . The *p* value ( $p=0.67$ ) is greater than the alpha value of .05. The mean score for Males ( $M=1.256, s=1.85$ ) is slightly higher than the mean for Females ( $M=1.158,$

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s=1.69). Due to the results, the hypothesis failed to be rejected that suggested that gender does not have an influence on adverse childhood trauma experiences.

### Chapter 5

The purpose of the study was to investigate how childhood trauma affects college athletes' resilience in sports. The participants included in this study were those college athletes who were enrolled in Warner University and the University of North Carolina in Pembroke. Each participant was surveyed on a series of demographic questions, as well as two survey instruments CD-RISC-10 and ACE-10. One of the instruments CD-RISC-10 scores assessed identifying resiliency through adversity while the ACE-10 scores assessed the types of childhood trauma. The voluntary participants completed the survey in less than ten minutes and a score was descriptively calculated based on the scores for both resilience and childhood trauma.

#### **Discussion**

Childhood trauma and resilience has common factors and indicators for one another throughout research. **H1** states that there is no statistically significant difference between resilience scores and gender of college athletes. **H1** failed to reject due to having no influence on the gender from childhood trauma or resilience. Although throughout research, childhood adversities showed benefits in resilience with emotional and physical developments (Reuther & Osofsky, 2013). Children that go through adversity learn to either develop resilience or be taught through external sources such as therapy or through a stable caregiver. (Werner, 1995; Fisher & van der Kolk, 2000; Sulimani-Aidan, 2018). Resilience was also a huge factor throughout research, especially within college athletics. College athletes throughout various divisions and skill levels face higher levels of motivation and increased need for resilience due to the

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challenges in sport and stressors within and outside of participation (Arora, 2015; Blanco-Garcia et al., 2021).

Another factor that was shown through H1 was that the mean score of ACE was significantly lower than the general population shown through research. While childhood adversity was present in both populations, one study noted that sports participation provides athletes with more resilience and protection from detrimental health outcomes as a result from the trauma faced earlier in life (Kaler et al., 2014). Childhood traumas had also been referred to as a motivational trigger by researchers Karen Howells and David Fletcher that researched autobiographies of Olympic swimmers in 2015 (Howells & Fletcher, 2015). Throughout the autobiographies, each swimmer faced periods of adversity during their youth but took it to transform themselves to grow within the sports. During the growth period, everyone used the sport swimming to form an emotional embodiment with the water in order to find meaning through the adverse experiences and form an identify (Howells & Fletcher, 2015).

Gender has also been factored throughout research in the predictors of how trauma from childhood affects that individual's resilience. **H2** stated that there is no statistically significant difference between resilience scores and gender of college athletes. **H2** rejected the null hypothesis because there was a statistically significant difference between the resilience scores based on the genders. A study found that levels of resilience were higher in males than females. Less determination and motivation were found in female sports when overcoming obstacles and goal obtainment. Even though the significance was small, there was still a relationship created with the difference of resilience through sports in males and females (Blanco-Garcia et al., 2021).

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In addition to gender factored in resilience, research has been done on how childhood trauma impacts genders. **H3** stated that there is no statistically significant difference between childhood trauma scores and gender of college athletes. **H3** failed to reject due to no statistical difference between the genders in relationship to the types of childhood traumas experienced. A study was done through the *NCCD Center for Girls and Young Women*, that contradicted the findings of the study by stating 70% of the girl's reported trauma of sexual and physical abuse, which was a higher rate to their male counterparts involved. Regarding the hypothesis, both genders do experience trauma but different types at different rates. Girls have been found to report higher risks of PTSD and more vulnerability to sexual and physical assault and abuse, as well as psychological distress over men (Tolin & Foa, 2006; Vogt, 2007).

### **Recommendation**

Through the conclusion of the research conducted, the researcher reflected over the strengths and weaknesses of the study. Regarding the demographic population, further study could examine the relationship between college athletes and academic students, with how that impacts resilience from childhood adversity. Academics could also be factored into the research with the different schools having a variety of majors and programs that are specific to each university. In addition, the difference between a secular and private university could also be taken into consideration in a future study to see the difference of individuals coming into different environmental settings and participation in college athletics. Another consideration and future research should look at the facilities and resources that are offered to the college athletes regarding mental health services to deal with childhood adversities and struggling with resilience in sports. The types of mental health services offered at universities should also be considered in further research to identify the resources offered to individuals that experienced childhood

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trauma. Further research should also be expanded over more universities, especially with a variety of different demographics and higher participation rate to find more statistical significance. This could help to reach a higher participation rate and more variety from various economic statistics and environments.

In conclusion, the following research has shown to have some connection between individuals going through childhood trauma and having more resilience through the stressors that come with being a college athlete. While the findings of the study did not find significant relationships between childhood trauma and resilience with genders, as well as how childhood adversity affects resilience in sports with college athletes, it does have some information for future research. Through future research and the information discussed, this could assist college athletes that have gone and dealt with childhood adversity to understand resilience and prepare for the stressors and challenges that participating in sports bring.



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**Appendix A**

**CITI Certificate**



Completion Date 14-Jan-2022  
Expiration Date 13-Jan-2025  
Record ID 46419301

This is to certify that:

**Emily Rosak**


Has completed the following CITI Program course:

**Social & Behavioral Research - Basic/Refresher**  
(Curriculum Group)  
**Social & Behavioral Research**  
(Course Learner Group)  
**1 - Basic Course**  
(Stage)

Under requirements set by:

**University of North Carolina Pembroke**

Not valid for renewal of certification through CME.



Verify at [www.citiprogram.org/verify/?w87d2411a-a7bf-4f04-8ad9-fe69bb9367ac-46419301](http://www.citiprogram.org/verify/?w87d2411a-a7bf-4f04-8ad9-fe69bb9367ac-46419301)

## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix B**

## Introduction Letter

Dear Head Coaches,

My name is Emily Rosak, and I am a graduate student in the Exercise Science and Sport Administration degree program at the University of North Carolina at Pembroke. As a requirement for graduation, a thesis research study must be conducted on a subject of my choice. My research study is investigating how childhood traumas affect college athletes' resilience. I am hoping through the data to provide effective services through the athletic staff and counseling center to better help the college athletes.

To gather the data for the study, I need to survey all the college athletes at the University of North Carolina at Pembroke. I would like to schedule an in-person meeting with you to discuss the details of the study and the additional materials that will be given to you to review. With your approval, I would like to invite your student-athletes to participate in the study and set up a time that I could administer my survey. Completion of the survey is completely voluntary, and the survey will take less than ten minutes to complete. No athlete will be pressured to participate and there will be no penalty for those who do not wish to partake.

My research supervisor is Dr. Jessica Seigiele. The information from the data collected in the study will help current and future college athletes build resilience through adversity. If there are any further questions, please do not hesitate to reach out to me.

Thank you for your time and cooperation,

Emily Rosak  
Department of Kinesiology – Graduate Student  
University of North Carolina at Pembroke

## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix C**

## Survey Instrument Introduction

## Title IX / Clery Compliance Reporting Exception for Research

During this research study, you may talk, or think about, sexual violence. Please know, that with a few exceptions, the researcher will not reveal these conversations, responses, or thoughts to UNCP Campus Police, Warner University Campus Police or the Office of Title IX and Clery Compliance.

The researcher will notify UNCP Campus Police, Warner University Campus Police, and/or the Office of Title IX and Clery Compliance if the following have been revealed during the research study:

1. The sexual violence involved a minor (i.e., an individual under age 18).
2. Employee-on-student sexual violence
3. Current or recent child abuse
4. Abuse of an incapacitated adult
5. Hazing

Additionally, if reports of sexual violence are revealed to the researcher outside of the research study, the researcher is obligated to report the sexual violence to UNCP Campus Police, Warner University Campus Police and/or the Office of Title IX and Clery Compliance. Outside of the research study could include, but is not limited to, interactions both before and after the research study takes place, a faculty member or staff member's office hours, or an advising appointment.

If you are experiencing harm or trauma from sexual violence, there are resources at UNCP and Warner University that can help you. Their contact information can be found below:

University of North Carolina in Pembroke:

Office of Title IX and Clery Compliance  
Oxendine Administration Building  
The Compliance Suite, Room 104  
910-521-6281  
titleixcoordinator@uncp.edu

Police and Public Safety  
Auxiliary Services Building  
910-521-6235  
police@uncp.edu

Counseling and Psychological Services  
Brave Health Center  
910-521-6202

Warner University:

## CHILDHOOD TRAUMA AND RESILIENCE

Title IX Off-Campus Confidentiality Support  
Royal MD Florida Council Against Sexual Abuse  
Toll-free 24-hour hotline (1.888.956.7273)

Peace River Center Victim Services  
Toll-free 24-hour hotline (1.877.688.5077)  
24-hour hotline, information and referral, crisis intervention, advocacy and accompaniment.

Title IX Coordinator  
Mrs. Janet Craigmiles  
Title IX Coordinator  
Phone: 863-638-7524  
Email: janet.craigmiles@warner.edu  
Campus Safety and Security  
863-638-7232  
security@warner.edu

I am 18 years old and have read the Title IX Compliance Form. I consent to participate in the study.

### Childhood Trauma and Resilience in College Athletes

#### Informed Consent

**Purpose:** The purpose of this study is to determine how childhood trauma affects the resilience in student athletes.

**Description:** The study is formatted in two sets of survey questions. Each participant will be asked 5 demographic questions, 10 questions on athletes' resilience, and a final 10 on adverse experiences in childhood. The survey should take approximately 10 minutes or less to complete. All college athletes at UNCP and Warner University have been invited to voluntarily participate in the study. Your participation is completely voluntary. College athletes are free to decide to participate or not participate, and their decision to participate (or not) will not affect their standing with their coach. Participants can withdraw from the study at any time without penalty.

**Confidentiality:** All responses will be recorded together without names or identifiers. All the data will be kept on a password protected computer. All data will only be accessible to the researcher and research advisor in order to maintain the protection of confidentiality for the participants.

**Benefits:** There is no pay or any direct benefit in the completion of this survey. Although, your contribution can provide valuable information to the athletic population as a current student-athlete at the University of North Carolina at Pembroke or Warner University.

## CHILDHOOD TRAUMA AND RESILIENCE

Risks: There are minimal risks in participating in this study. While the following survey has minimal to no risks, some Subject matter may be triggering. Some of the questions will ask about abuse, such as physical and sexual abuse. These questions may be troubling to some individuals.

Contact: If there are any questions, please contact Emily Rosak at 610-390-6856, [emily.rosak@warner.edu](mailto:emily.rosak@warner.edu), or [eer008@bravemail.uncp.edu](mailto:eer008@bravemail.uncp.edu). For further questions, please contact [irb@uncp.edu](mailto:irb@uncp.edu). If in need to talk to someone after taking this survey, a 24-hour crisis line is available for UNCP at 910-775-4749 and Warner University at (1.877.688.5077). The number for UNCP's Counseling center is also provided at 910-521-6202 and Warner University's online counseling center at (1.888.956.7273).

I am 18 years old and have read the informed consent. I consent to participate in the study.

## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix D**

## Demographics

**Age**

- 18
- 19
- 20
- 21
- 22+

**Gender**

- Female
- Male
- Non-binary or other gender not listed
- Prefer not to respond

**Ethnic Identity**

- Hispanic/ Latino
- Non-Hispanic/ Latino

**Race**

- African American/Black
- Asian/ Pacific Islander
- Indigenous/ Native American
- White
- Multiracial
- Not listed here (please specify)
- Prefer not to respond

**University Affiliation**

- Warner University
- UNCP

**Sport Affiliation**

- Baseball
- Basketball- Men's
- Basketball- Women's
- Football
- Golf
- Soccer- Men's
- Soccer- Women's
- Softball
- Spirit Squad
- Swimming/ Diving
- Track & Field/ Cross Country- Men's
- Track & Field/ Cross Country- Women's
- Volleyball- Women's
- Volleyball- Men's
- Wrestling
- Cheer
- Clay Targets

## CHILDHOOD TRAUMA AND RESILIENCE

- Flag Football
- Lacrosse- Women's

## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix E**

## Connor Davidson Resilience- 10 Scale

The scale measures your resilience and your ability to bounce back from stress or adverse life experiences. Choose one answer 0- Not true at all to 4- True nearly all the time, for each of the following questions. Please respond to all items, even if it does not pertain to you.

	0- Not true at all	1- Rarely true	2- Sometimes true	3- Often True	4-True nearly all the time
1. I am able to adapt when change occurs					
2. I can deal with whatever comes my way.					
3. I try to see the humorous side of things when I am faced with problems.					
4. Having to cope with stress can make me stronger.					
5. I tend to bounce back after illness, injury or other hardships.					
6. I believe I can achieve my goals, even if there are obstacles.					
7. Under pressure, I stay focused and think clearly.					
8. I am not easily discouraged by failure.					
9. I think of myself as a strong person when dealing with life's challenges and difficulties.					
10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.					



## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix F**

## Adverse Childhood Experiences (ACES) Questionnaire

The following questionnaire measures childhood trauma through 10 types of personal and family member traumatic experiences. Indicate either yes or no for each question based on the reflection of events prior to your 18th birthday. Please respond to all items, even if it does not pertain to you.

1. Did a parent or other adult in the household often or very often... Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?
2. Did a parent or other adult in the household often or very often... Push, grab, slap, or throw something at you? or ever hit you so hard that you had marks or were injured?
3. Did an adult or person at least 5 years older than you ever... Touch or fondle you or have you touch their body in a sexual way? or attempt or have oral, vaginal, or anal intercourse with you?
4. Did you often or very often feel that ... No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?
5. Did you often or very often feel that ... You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
6. Was a biological parent ever lost to you through divorce, abandonment, or other reason?
7. Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
9. Was a household member depressed or mentally ill? or Did a household member attempt suicide?
10. Did a household member go to prison?

## CHILDHOOD TRAUMA AND RESILIENCE

## Appendix G

## IRB Approval Letter (UNCP)

One University Drive  
P.O. Box 1510  
Pembroke, NC 28372

UNIVERSITY of NORTH CAROLINA  
**P E M B R O K E**

Institutional Review Board  
FWA 00005281

April 7, 2022

Emily Rosak  
Department of Kinesiology  
UNCP Campus

Title of Study: The effects of childhood trauma on the resilience of student athletes. IRB Protocol # 08-22

Dear Ms. Rosak:

The IRB has completed review of your protocol titled: The effects of childhood trauma on the resilience of student athletes and it is APPROVED.

Please note that if significant changes are made to the protocol, you must submit these changes to the IRB prior to their implementation in your study, as they may change the status of your review. Also, if any unanticipated or adverse events occur during this research, you must notify the IRB immediately.


Please include your protocol number (#08-22) on any future correspondence. This protocol expires in April 2025. If you should need to extend the research study beyond April 2025, please submit a new protocol to the IRB.

Additionally, since you have submitted the "Application for a Title IX/Clery Reporting Exception for Research" form, the IRB, in conjunction with the Office of Title IX and Clery Compliance and the General Counsel's Office, have requested that you incorporate the following items within the (protocol application / informed consent / debriefing form).

**Changes from the Title IX and Clery Compliance Office have been incorporated within the protocol materials.**

**The General Counsel's Office has not requested any changes.**

Please send a signed copy of this letter to the IRB indicating that you will comply with the recommendations of the above mentioned offices.


  
 Signature of Principle Investigator \_\_\_\_\_ Date 04/07/22

Sincerely,

Erik C. Tracy, Ph.D.  
Associate Professor of Psychology  
IRB Chair

## CHILDHOOD TRAUMA AND RESILIENCE

**Appendix H**

General Council Approval (Warner)

Good morning, Emily:

Thank you for your responses!

The Graduate Council approved your request.

Please let me know if you have any questions for me or if you need more information.

God Bless, and have a great weekend!





