

RELATIONSHIP OF RESILIENCE AND CHILDHOOD EXPERIENCES TO HIGH
SCHOOL ACADEMIC SUCCESS

by

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ABSTRACT

This study examined the relationships among resiliency and adverse childhood experiences (ACEs). Additional variables included positive childhood experiences, grit, mindset, and academic success as measured by self-reported high school grade point averages and self-reported high school letter grades. Participants were 135 college students enrolled in a freshmen-level class general psychology course at Middle Tennessee State University. Although I did not find any significant relationships between adverse childhood experiences and resiliency, I did find that resiliency had statistically significant positive relationships with both mindset and grit and that positive childhood experiences and negative childhood experience had a statistically significant negative relationship. I concluded that the number of ACEs did not statistically significantly relate to a student's self-reported GPA nor did having a high number of reported adverse childhood experiences when compared to a high number of positive childhood experiences. Finally, limitations included the homogenous nature of the study sample and the use of self-reported GPA as the dependent variable.

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CHAPTER I

INTRODUCTION

Overview

Many things contribute to a child's success in school. The following study was chiefly interested in examining the link between resiliency and adverse childhood experiences and how these two variables relate to school success. The study used the Adverse Childhood Experience Test to measure how much negativity participants reported experiencing in their childhood (Scamahorn, 2015). Additionally, I was interested in how grit, positive childhood experiences, and mindset correlate with resiliency, adverse child experiences, and school success. School success was measured by self-reported high school grade-point averages and average high school letter grades. I looked at resiliency, which is defined as being able to respond in a positive way to adverse experiences, using the Resilience Scale (Yeager & Dweck, 2012). Grit was measured using Angela Duckworth's 12-Item Grit Scale to see the amount of hard work and perseverance people demonstrate when they are challenged (Duckworth & Quinn, 2009). My final measure was mindset. It is composed of items from Dweck's (2006) book, *Mindset: The New Psychology of Success*. The study used correlations, one sample *t* tests, and an ANOVA to determine whether adverse childhood experiences are less related to negative academic outcomes when people have higher levels of resiliency.

Adverse Childhood Experiences

There are many factors that contribute to how a student will perform in school. Some of these things are out of the student's control and others the student and supportive adults can work to change. The current study focused on aspects of children's

lives that can be changed. To look at things that can be changed, first we must look at things that cannot be changed. This includes things that are out of a child's control but with the help of supportive adults can be altered but not completely changed. For example, the death of a child's parent cannot be changed but with the help of a supportive adult the outcome could be altered.

Some childhood events are positive and can be referred to as positive childhood experiences or PCEs. These include things such as good relationships with one's mother and father, being regularly hugged, and given verbal praise (Chung, Mathew, Elo, Coyne, & Culhane, 2008). Chung et al. (2008) found that experiencing a higher number of PCEs significantly correlated with reduced depressive symptoms among pregnant women. In addition to PCEs, there are adverse childhood experiences or ACEs. These are typically out of a student's control (Sheridan & McLaughlin, 2014). These are negative situations that children experience in childhood that are thought to impact their lives in significant ways, including their mental and physical health as well as their educational success. In addition to impacting a person's childhood, ACEs have been found in research to have long-term links, both positive and negative, to peoples' lives. These links often will continue into adulthood (Sheridan & McLaughlin, 2014). Several studies have shown this general pattern (Chung et al., 2008; Felitti et al., 1998; Kerker et al., 2015) although because of ethical concerns, a cause and effect relationship has never been experimentally established.

When assessing the importance of ACEs there are a number of different aversive situations that researchers typically consider. One of the seminal studies looking into adverse childhood experiences (Felitti et al., 1998) defined the characteristic of an ACE.

This analysis resulted in a total of seven specific ACE categories (Felitti et al., 1998).

The first three categories involved childhood abuse including psychological, physical and sexual abuse. The remaining four categories addressed a child's home environment.

These were exposure to substance abuse, domestic violence towards the mother, mental illness, and criminal behavior.

The Felitti et al. (1998) study gathered retrospective information concerning ACEs by administering surveys through the mail to community dwelling, typical adults aged 19 to 92 years old who had previously visited Kaiser Permanente's San Diego Health Appraisal Clinic and had recently received health screenings. The results of the questionnaires and the information obtained from the visits to the clinic included a family history. Results of the questionnaires allowed researchers to compare occurrences of ACEs with physical health and overall quality of life in adulthood.

Of the 9,508 respondents, more than half experienced at least one category of adverse childhood experiences. Witnessing substance abuse in the household was the most common category with 25.6% of the sample having experienced this category of ACEs. Experiencing criminal behavior in the household was the least common of the seven categories with only 3.4% of the sample having experienced this as a child. There was also a relatively high likelihood of being exposed to more than one category of adverse experiences with one fourth of the study participants having two or more ACEs. In addition, the more exposure a person had to adverse childhood experiences, the worse their health and wellbeing as an adult. Increased adverse childhood experiences were found to significantly correlate with an increased number of sexual partners, sexually transmitted diseases, substance abuse, obesity, depression and suicide attempts. There

was also a significant relationship between ACEs and exhibiting the risk factors for at least one of the leading causes of death (Felitti et al., 1998).

ACEs have been correlated with consequences for children of all ages. Kerker et al. (2015) focused their research on young children 18 to 71 months old. Information from the National Survey of Child and Adolescent Well-Being (NSCAW) II, which included information from case files of children who had been investigated by a United States welfare agency, was used to determine the amount and type of ACEs experienced by children in this age range. ACEs were defined the same way as in the original ACE study conducted by Felitti et al. (1998) with the exception that the Kerker study added three new categories. These were physical neglect, emotional neglect and divorce of the parents. Out of the 912 children included in the sample, almost all children (98.1%) had experienced at least one adverse childhood experience with half of the sample (50.5%) experiencing four or more ACEs. Physical and emotional abuse were the most common categories of ACEs followed by physical neglect. This study also included the Child Behavior Checklist (CBCL 1.5-5) as a measure of behavioral problems (Achenbach & Rescorla, 2001). Kerker et al. (2015) found that the number of ACEs a child had experienced increased the odds (odds ratio [OR] 1.32, $p = <.011$) of the child scoring in the problem range on the CBCL 1.5-5.

Subsequent study by Balistreri and Alvira-Hammond (2015) focused on children 12 to 17 years old. They used information that had already been collected by the US Maternal and Child Health Bureau in conjunction with the National Center for Health Statistics for the 2011/2012 National Survey of Children's Health (NSCH). This information was used to determine the number and type of ACEs most commonly found

in a sample that represented the national population and included 33,747 cases. The ACEs included divorce or separation of a parent, parent's incarceration, witnessing domestic abuse, having lived in the same household as someone with a mental illness, having lived with someone with a substance abuse problem, living with socio-economic hardship, the death of a parent, being the victim or witness to violence in their neighborhood, and having been discriminated against due to race or ethnicity. Balisteri and Alvira-Hammond also collected information on family functioning as well as information on the adolescents' health including emotional problems. This study found that over half (56%) of the 33,747 adolescents had experienced an ACE at some point in their lives. Along with this, they found that the number of ACEs an adolescent had experienced increased the odds of experiencing poorer health by 9% and more emotional problems by 32%.

Balisteri and Alvira-Hammond (2015) also analyzed individual ACEs to determine which ones were associated with higher percentages of poor health and emotional problems. Experiencing economic hardship was associated with the highest percentage of poor health problems while living with a mentally ill individual was associated with the highest number of emotional problems. Of all the adverse childhood experiences listed in the study, residing with a parent who was divorced or separated after the child was born was associated with the lowest percentage of health problems. Being a child who was treated unfairly because of their race or ethnic group was associated with the lowest percentage of emotional problems out of all the adverse childhood experiences listed in the study (Balisteri & Alvira-Hammond, 2015).

Whatever ACEs are experienced, they appear to be associated with a variety of negative outcomes for that individual's life. For example, Baglivio, Wolff, Piquero and Epps (2015) looked solely at different juvenile offender categories in relationship to ACEs experienced. They found that individuals experiencing five or more ACEs had a significant likelihood of being early offenders who continued to offend throughout their childhood. This group of early offenders was also found to have the highest number of problematic school behaviors and were more likely to have mental health problems. In addition, ACEs are found to be related to an increased likelihood of experiencing a depressed mood, using drugs, and engaging in antisocial behavior (Schilling, Aseltine, & Gore, 2007).

Schilling et al. (2007) looked at correlates of individual ACEs on high school seniors. They focused on having a depressed mood as measured by the 20-item Center for Epidemiological Studies' Depression (CESD) scale as well as self-reported drug use and self-reported frequency of antisocial behavior (Radloff, 1977). All of the following ACEs were found to show a significant relationship with having a depressed mood: being sent away from home, parents having substance abuse problems, witnessing someone being injured or murdered, experiencing sexual or physical abuse or assault, being neglected, and being held captive. The ACEs that are associated with self-reporting a significant amount of drug use were all of the ACEs listed for having an elevated depressed mood in addition to having parents who are separated and having parents who are unemployed. Lastly, engaging in antisocial behavior was positively associated with the following: parents who are separated, being sent away from home, parents who are unemployed,

parents who have substance abuse problems, witnessing someone being injured or murdered, experiencing sexual or physical abuse or assault, and being held captive.

As reviewed in the previous paragraphs, studies have looked at ACEs as risk factors for negative outcomes. Another example is Marie-Mitchell and O'Connor's (2013) research to see if ACEs had a relationship with poor outcomes. They found that risk exposure was positively correlated with the likelihood of experiencing developmental delays. In addition, they found that exposure to risk factors was related to a higher number of medical injuries. Cabaj, McDonald, and Tough (2014) added to the literature of ACEs. In addition to considering typical ACEs such as child abuse and drug use in the home, they looked at other risk factors and their relationship with behavioral and emotional problems. Using 405 participants who were part of a longitudinal study since birth, they found that parenting style, including negative interactions and hostility, as well as a child's mother's mental health were risk factors of internalizing and externalizing behavior problems (Cabaj et al., 2014).

In summary, ACEs have been related to both an individual's emotional and academic wellbeing. Many different things are considered to be ACEs as demonstrated by the seven categories established by Felitti et al. (1998) that were mentioned earlier. There has been a variety of research that looked at the negative outcomes related to ACEs (Balisteri & Alvira-Hammond, 2015; Cabaj et al., 2014; Schilling, Aseltine, & Gore, 2007). These negative relationships constitute risk factors that need to be addressed. In addition to considering factors that are related to negative outcomes, some studies looked at positive factors that help mitigate the risk factors and may result in positive outcomes.

These are called resilience factors and contribute to a person's overall resiliency (Cabaj et al., 2014).

Resiliency

Resiliency is a trait that can be useful in overcoming challenges, both self-made and beyond a person's control. Such challenges might be present throughout students' academic careers and throughout their lives. Resiliency can be defined in a number of ways. It can be seen as "good outcomes in spite of serious threats to adaptation or development" (Yeager & Dweck, 2012, p. 228). It is being able to overcome a negative situation and achieve a positive outcome (Forrest-Bank, Nicotera, Anthony, Gonzales, & Jenson, 2014). Possessing the trait of resilience gives people the coping skills they need to be better able to deal with stress. It helps them be able to relate to and respect others. It has been cited by Urie Bronfenbrenner (1979) as the reason why some children who experience traumatic events are able to overcome them and grow up to be successful adults. The reason that resilient individuals can overcome traumatic events may be due to the fact that people who are resilient have a realistic view of the world and are able to determine what they have control over in their lives. Resilience allows people to view challenges as obstacles to overcome instead of walls that cannot be breached. Essentially, resilient people are emotionally healthy, so they can recover after being figuratively knocked down (Brooks & Goldstein, 2001).

The theory of resilience and relational load (TRRL) by Afifi, Merrill, and Davis (2016) states that resilience is multifaceted. It predicts how people will handle stress and the ways that they will do this, as well as predicting the possible outcomes of this process. TRRL focuses on how relationships maintain and damage a person's resilience.

The idea is that people build up their emotional capital through positive interactions in their personal relationships. The more emotional capital a person has saved up, the better that person is able to view stress from a wider perspective. This allows people to approach stressful situations and their relationships in a positive manner which in turn builds their resilience. When a person's emotional capital is exhausted, this is referred to as relational load. This makes that person more susceptible to stress which can lead to mental, physical, and relational health problems. Building up resilience is important to help individuals deal with adverse situations.

There is a multitude of research that covers the topic of resiliency in many different contexts. One study conducted by Feinstein, Driving-Hawk, and Baartman (2009) provided a good example of what resiliency is. They looked into how students who lived on a poverty-stricken Indian reservation were able to be successful high school students. They looked at resiliency in the context of Urie Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979). This theory looks at human development by understanding a person's relationship to five different subsystems. The first subsystem is the microsystem which includes the individual's family, friends, and school. Next is the mesosystem which looks at relationships between different entities in the microsystem such as the interaction between an individual's family and friends. Next is the exosystem, referring to indirect relationships that have influence on the individual's life such as the school board. The fourth subsystem is the macrosystem which looks at the influence of society and culture on the individual. The last system is the chronosystem which looks at events in a person's life such as the death of a parent. Bronfenbrenner's theory has been one of the most used in developmental psychology because it allows psychologists to

look at the many ways environmental influences affect a person's development (Shaffer & Kipp, 2014).

Feinstein et al. (2009) surveyed students to identify what was important for students who were classified as resilient at the different levels of Bronfenbrenner's Ecological System. They found that students who were resilient tended to have strong microsystems. These strengths were shown by the fact they had plans to further their education by attending college and they realized that having a job was important. The more resilient students also preferred to spend their free time involved in extra-curricular activities as opposed to idleness like watching television. When asked about role models, the more resilient students identified people who encouraged them and who they viewed to be hard workers. The students were also able to identify areas where they excelled. Likewise, these resilient students had positive views of who they were as people.

Another study that looked at resiliency in the context of Bronfenbrenner's Ecological theory was conducted by Lessard, Butler-Kisber, Fortin, and Marcotte (2014). They used data from a longitudinal study to identify students who were at risk for dropping out of school. The overall purpose of the study was to determine why some of these at-risk students succeeded at finishing high schools and why others did not. At the ontosystem level, which focuses on the emotional and psychosocial abilities of the individual, Lessard et al. found that students who succeeded in high school were resourceful and took time to plan. At the micro level, Lessard et al. found that most resilient students had negative relationships with their fathers while at the same time having strong supportive relationships with their mothers. According to the study this differed from drop out students who had poor relationships with both of their parents.

Resilient individuals who completed high school were also found to have other positive relationships in their lives with teachers and peers. Having at least one positive influential adult figure appeared to have affected the mesosystem since, according to the study, it gave resilient students someone to ask for help which in turn helped them to overcome learning difficulties.

Prince-Embury (2011) also looked at resiliency in the school setting. This study discussed how using the Resiliency Scales for Children and Adolescent (RSCA) can help identify students with low and high resiliency (Prince-Embury, 2007). She discussed areas of resiliency of particular interest in the school setting. One area found to promote resiliency was a sense of mastery or being able to do things without the help of others. Other areas include a sense of relatedness which encompasses relationships with others. The last area this study mentioned was emotional reactivity. Prince-Embury found that students who are better able to control their emotions have higher levels of resiliency than children who are more emotionally reactive.

Furthermore, the relationship between school and resiliency is reciprocal. Not only has it been found that resiliency can help an individual do well in school, doing well in school has been found to be a resiliency factor in other areas of a child's life. Support for this reciprocal relationship was found in a study conducted by Marriott, Hamilton-Giachritsis, and Harrop (2014). Their study was a review of 50 peer reviewed papers that looked at childhood sexual abuse and resiliency factors that correlated coping success with their levels of abuse. They found that several studies supported positive school experiences as a resiliency factor. These included such things as positive relationships with teachers and making good grades in school.

Marriott et al. (2014) identified other resiliency factors in addition to positive educational experiences. Some factors that are external to the child that they linked to resiliency were having a supportive and stable caregiver. Along with this, they found that positive parenting practices and feeling understood by a parent were also factors that relate to resiliency. Some inner resources they identified as resiliency factors were being adaptive and having good coping skills. They also found an individual's attributional style to be linked to resiliency with individuals who were able to attribute negative circumstances as external factors were more likely to be resilient.

In summary, authors writing about resilience (Brooks & Goldstein, 2001; Forrest-Bank et al., 2014; Lessard et al., 2014) concluded that possessing resilience can help individuals overcome negative life experiences. In addition to this, resiliency factors can help individuals deal with academic adversity and succeed in school. Feinstein et al. (2009) showed the importance of strong role models and being involved in extracurricular activities to build resiliency in students. Doing well in school has also been shown to correlate with building resiliency in a child's life outside of school (Marriott et al., 2014). Furthermore, resilience has been linked to the concepts of grit and mindset which have also been shown to support academic success.

Grit

Another concept linked to resiliency that has been correlated with school performance is grit. Grit is described as the perseverance to work towards what you want even when there are obstacles in your way (Duckworth, Peterson, Mathews, & Kelly, 2007). A person needs to possess resiliency to be gritty since part of being resilient is overcoming adversity. Although the constructs of grit and resiliency overlap, grit is

equivalent to hard work and perseverance, whereas resiliency more is related to using coping skills and a positive outlook to overcome negative experiences. Duckworth et al. believed that grit is required to be successful, even more so than being naturally gifted. They believed that grit was separate from IQ and developed a scale to test this hypothesis. Once the Grit Scale was developed, they validated items through the use of online survey administration followed by examining internal consistency and factor analysis (Duckworth et al., 2007). The two factors that were used were Consistency of Interests and Perseverance of Effort. Once they had narrowed down the scale to 12 items, 6 loading on each factor, they conducted multiple studies using the Grit Scale.

The first grit study discussed by Duckworth et al. (2007) consisted of 1,545 participants 25 years and older. The finding indicated that overall the more educated an adult was, the more grit the person possessed. This was particularly true for individuals with an associate's degree who were found to be significantly higher in grit than those with less education. These individuals also were found to possess more grit, though not a significant amount more, than the participants who had completed a bachelor's degree.

The second study by Duckworth et al. (2007) determined that grit provided incremental predictive validity of educational attainment beyond that of the Big Five personality factors. The Big Five personality factors include conscientiousness, extraversion, neuroticism, agreeableness, and openness to experience. The third study investigated undergraduates at an elite college to see if grit could explain the variance in their grade point averages beyond the variance explained by intelligence which was measured by SAT scores. Surprisingly, Duckworth and associates found that grit was associated with GPA, in that students with lower Scholastic Aptitude Test scores tended

to be higher in grit than their high-achieving peers. Furthermore, it was found that grit and GPA positively correlated with each other ($r = .25, p < .01$) but not as strongly as SAT scores and GPA ($r = .30, p < .001$).

One of the other Duckworth and colleagues' studies involved the 2005 Scripps National Spelling Bee. They wanted to see whether grit correlated with the likelihood of a contestant making it to the final round. The results showed that grit was a significant positive predictor of advancing in the competition but not significantly related to making it to the final round.

Two of the other studies conducted by Duckworth and associates (2007) related to the performance of cadets at West Point Academy. The researchers wanted to see if grit would predict retention of students in West Point's very demanding summer program better than self-control. In addition to this, the researchers also used the results to determine if grit would predict both the student's military and academic grade point averages. They found grit was the best predictor of completing the summer program, even more so than self-control. However, grit was not found to be the best predictor for cadets' military or academic GPAs when compared to self-control. All of these studies show that grit plays a role in attaining academic achievements such as finishing high school and attending college.

Possessing grit has also been found to correlate with life experiences unrelated to school success. A study conducted by Blalock, Young, and Kleiman (2015) found that possessing grit negatively correlated with suicidal ideation. The researchers found that participants low in grit reacted to negative life events with relatively high degrees of suicidal ideation. On the other hand, the researchers found that participants high in grit

reacted to negative life events with relatively low degrees of suicidal ideation. The study consisted of 209 undergraduate college students who filled out the survey measuring depression scale and the negative life events. Surveys were completed at two different times with a span of 4 weeks between each time of completion.

In summary, the previous studies (Blalock et al., 2015; Duckworth et al., 2007) demonstrate that grit is helpful in overcoming negative life experiences. Being gritty helps individuals succeed by giving them the tools to handle tough situations. In this way, it is related to resiliency since resilience allows individuals to overcome adverse life experiences.

Mindset

Another concept linked to resiliency that has been correlated with school performance is mindset. Dweck (2006) spent many years looking into how mindset, which she defined as how people view the world and what they believe they are capable of, relates to life outcomes. People will either view their world as something they have the ability to change or as something that is already set and believe they have to work within the set parameters of what they are given. According to Dweck's theory, there are two different descriptors of mindsets that a person can have. The first type is a fixed mindset and includes the belief that the qualities that one possesses are inflexible. People with this type of mindset would be expected to feel that their IQ is something that is set in stone and that they are unable to change what they are capable of. When these people fail, they would give up trying again, assuming that they are simply incapable of completing the task set before them. On the other end of the spectrum is the growth mindset. People possessing this mindset believe that through effort and perseverance they can grow and

become better. When faced with failure, they try to learn from it so that next time they can do better. They do not avoid challenges but face them head on in the hopes of expanding their skill set.

Yeager and Dweck (2012) investigated the idea that teaching students to have a growth mindset can help the students overcome academic underachievement. They looked at two different types of implicit theories that people may have about their intelligence. The first theory is entity theory, which is similar to a fixed mindset in that individuals believe they are only given a fixed amount of intelligence. The second theory is incremental theory, which is similar to a growth mindset in that these individuals believe they can increase their intelligence over time. People with an incremental theory of intelligence have been found to respond to academic challenges with more resiliency which may help them succeed. Yeager and Dweck also assert that a person can be taught to have an incremental theory of intelligence over time and that changing a person's mindset can impact how they confront adversity.

In addition, Yeager and Dweck (2012) have found that students' mindsets can be impacted by the adults around them even if the adults are not intentionally meaning to cause harm. This is especially true of students who are given praise focusing on their intelligence instead of praise of their hard work. In one study, children who were praised for just their intelligence solved 30% fewer problems than those who were praised for their work process. Focusing solely on students' intelligence in regard to their achievements can cause them to be less resilient when faced with academic adversity and to take on an entity theory of intelligence.

Another study that is related to academic success and mindset was conducted by Dweck (2006) and measured students' mindsets as they transitioned into junior high. The results of her study found that students who had previously been exhibiting similar academic performance before entering junior high experienced different trajectories once they entered junior high based on their mindset. The students with growth mindsets increased their grades during their junior high years while those with fixed mindsets saw a decrease in grades. Part of the reason students with a fixed mindset may fail to achieve greater success is due to what Dweck calls the Low-Effort Syndrome. This refers to when people with a fixed mindset approach a challenge as something that is likely to reveal their flaws for all to see. As a result, they put in as little effort as possible to protect themselves from this happening. On the other hand, Dweck found that students with a growth mindset approached their learning as something they are in charge of and the mistakes they make as something to learn from. Dweck believes that with the right mindset students can change their thinking and produce results they were previously believed to be incapable of.

In summary, the type of mindset one has can relate to effort and successes in many areas of life, not just academics. Those with fixed mindsets will not face their problems head on and instead choose to ignore them. When people with fixed mindsets experience new problems, they may have a hard time believing that they are not at fault and the cause of the problems (Dweck, 2006). Individuals with a growth mindset will experience problems through a different viewpoint. Instead of feeling unworthy and allowing the problems to prevent them from moving forward with their lives, they will try to gain understanding from what has taken place and learn from it. This correlates

with building resilience because a growth mindset is a way to cope with stress by viewing obstacles as things to overcome and not roadblocks. In this way, the mindset people have may impact how they deal with any ACEs they may have experienced.

Measuring Academic Achievement

Academic success consists of many different components. A common measure of a students' academic achievement is their grade point average or GPA. York, Gibson and Rankin (2015) conducted a literature review to discern how the term *academic success* is commonly defined and measured in educational research. They discovered that academic achievement is nearly always measured by either letter grades, GPA, or a combination of both. One reason they believe that GPA is used so often is that it is easily accessible and readily available to most institutions that are conducting educational research.

Gershenfeld, Hood, and Zhan (2016) conducted a study using the first semester of college GPA as a predictive variable. They were looking to see if first-semester college GPA would predict the graduation rates for underrepresented students from racial minorities and from families with lower incomes. The study consisted of 1,947 participants enrolled as freshmen during 2005 and 2006 at a public Midwestern university. The participants were tracked for 6 years to see if they graduated. The results of the study found that a low first semester GPA, 2.33 or below, significantly predicted that a student would not graduate from college when compared to students with a GPA of 3.68–4.0.

Acosta, North, and Avella (2016) also looked at GPA as a predictive variable for academic success. They conducted a study with 290 students to see if college GPA would predict success in a college level math course for students who had previously taken an

intermediate level college math course. The results of the study found GPA to be a statistically significant predictor for the completion of a college level math course with a letter grade of C or higher.

Chase, Hilliard, Geldhof, Warren, and Lerner (2014) used self-reported high school GPA in their study as a measure of academic achievement. The purpose of their study was to see if there were any relationships between school engagement and academic achievement. They looked at three types of school engagement which included cognitive, emotional and behavioral. Using information from a previous study conducted by Lerner et al. (2005) of positive youth development, the researchers analyzed data collected from 710 adolescents between 10th and 12th grade. The results of the study showed that there are significant relationships between GPA and all three types of engagement. The relationship between GPA and school engagement was found to be bidirectional in that GPA not only predicted school engagement but school engagement also predicted GPA.

In summary, self-reported GPA can be used as a measure of academic achievement. Not only is it easily accessible but GPA has also been linked to school engagement and as a predictor for completing college (Acosta et al., 2016; Chase et al., 2014). In addition, a relatively high validity was found for self-reported GPA, with self-reported high school GPA strongly correlating with the GPA listed in school records ($r = .82, d = .32$) (Kuncel, Crede, & Thomas, 2005).

Statement of the Problem and Hypotheses

The purpose of the present study was to better understand resiliency and adverse childhood experiences by determining how these two important constructs correlated

with each other as well as with academic success, grit, mindset, and positive childhood experiences. These relationships were determined by analyzing the data that were collected through the online administration of various questionnaires covering each topic.

Academic success will be measured by self-reported high school grade point averages. Kuncel et al. (2005) conducted a meta-analysis on the validity of self-reported GPAs. Self-reported high school GPA was found to have a high validity when compared to the GPA listed in student records. High school GPA was also found to be accurately self-reported 82% of the time.

Hypothesis 1. Measures of resiliency, growth mindset, grit, positive childhood experiences, and self-reported high school grade point averages were expected to correlate positively and significantly.

Hypothesis 2. Participants with high resiliency were expected to have higher self-reported high school grade point averages than participants with low resiliency.

Hypothesis 3. Participants with high measured positive childhood experiences were expected to have higher self-reported high school grade point averages than participants with high measured adverse childhood experiences.

Hypothesis 4. Participants with high measured resiliency and high measured adverse childhood experiences were expected to have higher self-reported high school grade point averages than participants with low measured resiliency and high measured negative childhood experiences.

CHAPTER II

METHOD

Participants

The participants of the study were Middle Tennessee State University college students. There were 135 participants (39 males, 100 females). They were volunteers from the MTSU psychology research pool. If participants were General Psychology 1410 students, they received class credit for participating in the study.

Materials

The online questionnaire for the study was made using Qualtrics. Before beginning the study, participants signed an online informed consent form (see Appendix B). The consent form explained the purpose of the study.

Resilience Scale (Wagnild & Young, 1993). This instrument measures how much resilience a person possesses. This scale consists of 25 items. Items are scored on a 7-point scale (1 = *disagree*, 7 = *agree*). The scale contains two factors which are Personal Competence (e.g., “I can be on my own if I have to”) and Acceptance of Self (e.g., “I usually take things in stride”). Possible scores range from 25 to 175 points. The higher the score, the more resilient a person is. The scale has both satisfactory reliability and validity. Construct validity was established by factor analysis. The reliability was established using coefficient alpha (Wagnild & Young, 1993). The scale has an overall internal consistency alpha of .93, Personal Competence alpha of .93, and Acceptance of Self alpha of .80 (Wagnild, 2016). In the current study, alphas were also acceptable (see Table 1).

12-Item Grit Scale (Duckworth et al., 2007). This instrument measures how much grit a person possesses. Each item is scored on a 5-point scale (Items 2, 3, 5, 7, 8, and 11; 1 = *very much like me*, 5 = *not like me at all*. Items 1, 4, 6, 9, 10, and 12; 5 = *very much like me*, 1 = *not like me at all*). The higher the score, the grittier the individual is. The scale contains two factors with six questions each: Consistency of Interests (e.g., “I have difficulty maintaining my focus on projects that take more than a few months to complete”) and Perseverance of Effort (e.g., “I have achieved a goal that took years of work”). Confirmatory factor analysis was used to establish validity. The scale has an overall internal consistency alpha of .85, Consistency of Interests alpha of .84, and Perseverance of Effort alpha of .78 (Duckworth et al., 2007). In the current study, alphas were also acceptable (see Table 1).

Mindset Survey. This survey consists of eight questions from Dweck's (2006) book *Mindset: The New Psychology of Success*. Four questions will focus on fixed mindset and four questions will focus on a growth mindset. Each item is scores on a 5-point scale (Questions 3, 4, 6 and 8; 5 = *very much like me*, 1 = *not like me at all*. Questions 1, 2, 5 and 7; 1 = *very much like me*, 5 = *not like me at all*). There is a possible score of 40. Higher scores indicate that a person has a growth mindset while lower scores denote a person with a fixed mindset. Questions include “You can learn new things, but you can’t really change how intelligent you are” (fixed mindset), and “You can always change how intelligent you are” (growth mindset). Reliability data showed acceptable coefficient alphas (see Table 1).

Adverse Childhood Experiences Test (Scamahorn, 2015). This measure consists of 10 questions that ask about different types of adverse childhood experiences

that people may have experienced during childhood. Items include “Did a household member ever go to prison?” and “Did your parents separate or divorce before you were 18?” If the respondents have experienced the scenario in the question they answer *yes*, if they have never experienced the scenario they answer *no*. Every question answered *yes* equals 1 and every question answered *no* equals 0. Total score is calculated by summing the number of questions to which a respondent answered *yes*. A low score is 0-2 points while a high score is 5-10 points (Scamahorn, 2015). See Appendix C for a copy of the measure.

Positive Childhood Experiences Test (Scamahorn, 2015). This measure consists of 10 questions that ask different types of positive childhood experiences. Items include “Did a household member ever receive a public-sponsored award?” and “Were your parents always eagerly supporting each other and you?” If the respondents have experienced the scenario in the question they answer *yes*, if they have never experienced the scenario they answer *no*. Every question answered *yes* equals 1 and every question answered *no* equals 0. Total score is calculated by summing the number of questions to which a respondent answered *yes*. A low score is 0-2 points while a high score is 5-10 points (Scamahorn, 2015). See Appendix D for a copy of the measure.

Self-Reported High School GPA and Letter Grades. The participants chose their letter grade (*Mostly As, Mostly below D*). They were also asked to type in their self-reported high school GPA. The participants self-reported high school letter grades and self-reported high school GPAs were recorded in the following way; All As = 4.0, Mostly As and Bs = 3.5, All Bs = 3.0, Mostly Bs and Cs = 2.5, All Cs = 2.0, Mostly Cs and Ds = 1.5, All Ds = 1.0, and Mostly below Ds = 0.5. See appendix E for a copy of this measure.

Procedures

The study took place between October 2016 and May 2017. The participants were recruited through the MTSU psychology research pool. As specified in the approved Institutional Review Board form (see Appendix A), before beginning the study, participants read an overview of what the study entailed (see Appendix B). They then had to give online consent before beginning the survey. Next, they were asked to report their high school GPA and high school letter-grade average. They also identified their gender.

I used a counterbalanced design. The Childhood Experiences tests were presented either at the beginning or the end of the questionnaire. The order of presentation was determined randomly. The other measures to be completed were the Resiliency Scale followed by the 12-Item Grit Scale and the Mindset Survey. At the end of the questionnaires, there was a page thanking respondents for their participation and providing the information for the Middle Tennessee State University's Counseling Center (see Appendix F).

Once the surveys were completed by the participants the experimenter analyzed the data. For the descriptive statistics the mean and standard deviation were calculated for each of the measures used in the study. For the inferential statistics, Pearson r correlations were used to look for correlations among the measures in Hypothesis 1. For Hypothesis 2 an analysis of variance was calculated and for Hypotheses 3 and 4 one-sample t tests were calculated.

CHAPTER III

RESULTS

Descriptive Statistics

All data were analyzed using The Statistical Package for the Social Sciences (SPSS) software. The following variables were analyzed: raw scores from the Resilience Scale, 12-Item Grit Scale, Mindset Measure, Adverse Childhood Experience Test, and Positive Childhood Experience Test, as well as self-reported high school GPAs. Coefficient Alphas were calculated for all dependent variables. Internal consistency of the Positive Childhood Experiences test and the Adverse Childhood Experiences test were analyzed using KR-20. Score ranges, means, standard deviations, and Cronbach's alphas for each dependent variable appear in Table 1. For the two scales that have published psychometrics, Resilience Scale and 12-Item Grit Scale, Table 2 presents the norms along with the ones found in the current sample.

Inferential statistics

The first question that I asked was whether the order of presentation of the ACEs and PCEs tests on the questionnaire significantly related to the scores. Through the use of independent t tests it was found that the order of the ACEs and PCEs tests on the questionnaire did not significantly relate to the scores for any of the measures: Resilience Scale, Mindset Measure, or 12-Item Grit Scale.

Hypothesis 1: I hypothesized that measures of resiliency, growth mindset, grit, positive childhood experiences, and self-reported high school grade point averages would correlate positively and significantly. Pearson r correlations were used to analyze

Table 1

Descriptive Statistics of Study Measures

Measure	Score Range	Mean	Standard Deviation	Cronbach's Alpha
Resilience Scale Total	25-175	145.28	14.42	.87
Resilience Scale Factor 1: Personal Competence	1-119	101.06	9.94	.85
Resilience Scale Factor 2: Acceptance of Self and Life	1-56	44.22	5.98	.69
12 Item Grit Survey	1-5	3.55	0.54	.78
Grit Factor 1: Consistency of Interest	1-5	3.58	0.58	.62
Grit Factor 2: Perseverance of Effort	1-5	3.58	0.61	.68
Mindset Measure	8-40	25.49	4.85	.70
ACEs Test	0-10	1.87	2.21	.76*
PCEs Test	0-10	6.90	2.29	.76*
Self-Reported High School GPA	0.00-4.00	3.53	0.41	X

*KR-20 values

Table 2

Descriptive Statistics of Resilience Scale and 12-Item Grit Scale

	Mean	Standard Deviation	Co-efficient Alpha
RS Norm Total	135.49	19.68	.93
RS Norm Factor 1	95.03	X	.93
RS Norm Factor 2	40.46	X	.80
RS Study Sample Total	145.28	14.42	.87
RS Study Sample Factor 1	101.06	9.94	.85
RS Study Sample Factor 2	44.22	5.98	.69
Grit Norm Total	3.65	0.73	.85
Grit Norm Factor 1	2.9	0.9	.84
Grit Norm Factor 2	3.7	0.7	.78
Grit Sample Total	3.55	0.54	.78
Grit Sample Factor 1	3.58	0.58	.62
Grit Sample Factor 2	3.58	0.61	.68

Hypothesis 1 to see if there were any relationships between measures. There was an .05 alpha level based on *one-tail t test*. The correlation results are listed in Table 3.

Hypothesis 1 was partially supported based on significant positive relationships found among PCEs and resiliency, grit, and mindset. In addition, further support was based on significant positive relationships for resiliency with both grit and mindset.

Hypothesis 2: I hypothesized that participants with high resiliency would have higher self-reported high school GPAs than participants with low resiliency. This hypothesis was analyzed by a 3 (high resiliency which is over 145 points, medium resiliency which is 121-145 points, and low resiliency which is 120 or less points) x 1 analysis of variance with self-reported high school GPA as the dependent variable. There were no statistically significant differences found between the resiliency group a participant belonged to and their self-report high school GPA, $F(2, 132) = 2.645, p = .075$.

Hypothesis 3: I hypothesized that participants with high measured positive childhood experiences (PCEs) would have higher self-reported high school GPAs than participants with high measured adverse childhood experiences (ACEs). An independent *t test* was used with self-reported high school GPA as the dependent variable. The first group was the High ACEs group where the participants had high ACEs but not high PCEs. The second group was the High PCEs group where the participants had high PCEs but not high ACEs. To be considered high an individual would have to have a score of 5 or more. There was not a significant difference in self-reported high school GPA for the High ACEs and the High PCEs group, $t(9.394) = -.612, p = .555$.

Table 3

Correlations for Hypothesis 1

Measures	PCEs totals	Mindset Total	Resilience Scale total	Self-reported HS GPA
ACEs total	$r = -.562^{**}$	$r = .271^{**}$	$r = .022$	$r = -0.99$
PCEs total		$r = -.230^{**}$	$r = .189^*$	$r = .156$
Mindset total	$r = -.230^{**}$		$r = .393^{**}$	$r = -.068$
Resilience Scale total	$r = .189^*$	$r = .337^{**}$		$r = -.052$
Resilience Scale Factor 1: Personal Competence	$r = .158$	$r = .285^{**}$		
Resilience Scale factor 2: Acceptance of Self and Life	$r = .317$	$r = .240^{**}$		
Grit total	$r = .220^*$	$r = .185^*$	$r = .393^{**}$	$r = -.072$
Grit factor 1: Consistency of Interest	$r = .106$	$r = .230^{**}$		
Grit factor 2: Perseverance of Effort	$r = .248^{**}$	$r = .119$		

* $p \leq .05$ ** $p \leq .01$

The High ACEs group had a sample size of 10, a mean of 3.41, and a standard deviation of .72. The High PCEs group had a sample size of 110, a mean of 3.55, and a standard deviation of .35.

Hypothesis 4: I hypothesized that participants with high measured resiliency and high measured adverse childhood experiences would have higher self-reported high school grade point averages than participants with low measured resiliency and high measured negative childhood experiences. An independent *t* test was used with self-reported high school GPA as the dependent variable. The first group was the High Resiliency High ACEs group where the participants had a high resiliency score and high ACEs score. The second group was the Low Resiliency High ACEs group where the participants had a low resiliency score and high ACEs score. A high resiliency score is over 145 points, a low resiliency score is 120 points or less, while a high ACEs score is 5 or more. There was not a significant difference in self-reported high school GPAs between the two groups, $t(10) = -.593, p = .567$. The High Resiliency High ACEs group had a sample size of 11, a mean of 3.38, and standard deviation of .66. The Low Resiliency High ACEs group had a sample size of 1 and a mean of 3.8.

CHAPTER IV

DISCUSSION

The main purpose of this study was to look for the relationships between adverse childhood experiences (ACEs), resiliency, and school success as measured by self-reported high school grade point averages (GPAs). I expected to discover that individuals who had experienced a high number of ACEs and who also scored as being higher in resilience would have higher self-reported GPAs. Along with this, I expected that individuals who were more resilient would have higher GPAs than individuals who were lower in resiliency. I also expected to find that participants who had a high number of positive childhood experiences (PCEs) would have higher self-reported high school GPAs than those individuals who had a high number of ACEs. In addition to those expectations, I also looked at the correlations between PCEs, resiliency, grit, mindset, and GPA with the prediction that there would be positive relationships among the different constructs.

This study had many significant correlations though not all were positive. There was a statistically significant negative correlation between the number of ACEs and PCEs reported. This means that the more PCEs an individual reported the fewer ACEs they reported. This may be due to the fact that many of the ACEs and PCEs contradict each other. Such as “Did you always feel that your family members loved you, acknowledged your efforts and successes and said that you were productive?” and “Did you feel that no one in your family loved you, or they treated your goals as foolish and disparaged your successes?”

The number of PCEs reported also had a statistically significant negative relationship with the Mindset total while PCEs had a statistically significant positive relationship with the Mindset total. This is interesting because a higher Mindset total denotes a growth mindset so this relationship is saying that individuals with a fixed mindset tend to have a higher number of reported PCEs while an individual with a growth mindset tend to have a higher number of reported ACEs. One reason for this relationship between PCEs and a fixed mindset may be due to the fact that praising a child for their intelligence and not their work can lead to them having a fixed mindset (Yeager & Dweck, 2012). A few of the PCEs focus on having a supportive relationship with adults in your life and receiving praise. Part of having a growth mindset is knowing that you have the ability to overcome challenges which may be presented by experiencing an increasing number of ACEs (Yeager & Dweck, 2012).

Another interesting relationship was that the number of total PCEs reported was positively correlated with both the Resilience Scale total and 12-Item Grit Scale total. Many of the PCEs, such as having a strong relationship with a positive adult and having good role models in your life, can boost resiliency in a child so it not surprising to see that a higher number of reported PCEs resulted in a higher score on the Resilience Scale (Feinstein et al., 2009). Since grit and resiliency are traits that overlap it makes sense that high number of reported PCEs will result in high score on both of those measures (Duckworth et al., 2007). In conjunction with this, there was also a statistically significant positive relationship between the Resilience Scale total and the 12-Item Grit Scale total which again is not surprising since both grit and resiliency involve overcoming adverse experiences (Duckworth et al., 2007; Forrest-Bank et al., 2014).

The Resilience Scale total also had a statistically significant positive relationship with the Mindset total meaning that being more resilient correlated with a growth mindset. The 12-Item Grit Scale total and Mindset total also showed a statistically significant relationship with each other. The fact a strong positive relationship was found between having a growth mindset and being grittier is not surprising since both have independently strong relationships to resiliency. All three of these constructs relate to overcoming difficult situations which may contribute to the positive relationships that were found among them (Duckworth & Quinn, 2007; Dweck, 2006; Forrest-Bank et al., 2014).

This study was able to compare the norms for the Resilience Scale and the 12-Item Grit Scale to the present sample. The scores were quite similar. Any differences that were found can be attributed to the differences used in the norm and the study sample. In addition to both the norm samples being much larger than the present sample the age ranges from the Resilience Scale was 53-95 years old and the 12-Item Grit Scale was 25-64 years old where with the present sample the age range was made up of students taking introductory college classes.

Limitations

One of the biggest limitations of this study was the homogenous nature of the sample. All participants were college students enrolled in a general psychology course at Middle Tennessee State University. This means that they had overcome enough obstacles to gain acceptance into a 4-year university. This implies resiliency and grittiness. Participation in this study also implies that they cared enough about their grade in this course to participate in the research that is required of each student enrolled. This

indicates a growth mindset. Furthermore, the homogenous nature of the sample may have impacted the number of ACEs reported by participants. Moreover, using a more heterogenous sample may have increased the number of ACEs to make them more representative of the population at large.

Another issue is the sample size. This study could have benefitted from more participants to see if the results were typical of the larger population. To overcome these limitations, it would be beneficial to conduct this study with a more varied population than what is found on a college campus and with a larger sample size. In addition, the sample differed from the Resilience Scale and 12-Item Grit Scale norm populations in a variety of way. The Resilience Scale norm population was made up of Pacific Northwestern middle-aged and older-adults with 79% of the respondents being retired (Wagnild, 2016). The 12 -Item Grit Scale norm sample were members of the University of Pennsylvania's Authentic Happiness website and the mean age of respondents was 45 years old (Duckworth et al., 2007).

Finally, the lack of statically significant differences between groups may be due to the fact that GPA may not have been the best dependent variable to measure academic success. Kuncel et al. (2005) found that self-reported GPA was not as accurately reported by lower performing students as it was by their higher achieving peers. Being that this was a self-reported measure it would be easy for the participants to falsely report their GPAs. In fact, GPA was not found to correlate significantly with any of the other measures used. I think it would be advisable to use a different dependent variable in the future.

Conclusions

Disappointingly, the results of the study did not find a significant difference for self-reported high school GPA when comparing individuals with a high number of reported ACEs and a low number of reported ACEs. There was also no difference found when comparing individuals with a high number of reported PCEs to those with a high number of reported ACEs. And there was not a significant difference between having high resilience combined with high ACEs and having low resilience combined with high ACEs. However, I did find a host of interesting correlations among measures of adverse and positive childhood experiences, grit, mindfulness, and resilience.

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APPENDICES

APPENDIX A
Institutional Review Board Form

IRB

INSTITUTIONAL REVIEW BOARD

Office of Research Compliance,

010A Sam Ingram Building,

2269 Middle Tennessee Blvd

Murfreesboro, TN 37129



IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Thursday, October 27, 2016

Investigator(s): Erin Loube (PI), and James Rust (FA)

Investigator(s) Email(s): enl2p@mtmail.mtsu.edu

Department: Psychology

Study Title: Does how well you overcome challenges relate to school success?

Protocol ID: **17-2072**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21

CFR 56.110 within the category (7) *Research on individual or group characteristics or behavior* A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	APPROVED for one year from the date of this notification	
Date of expiration	10/31/2017	
Participant Size	200	
Participant Pool	MTSU Psychology Research Pool	
Exceptions	N/A	
Restrictions	Students from the Psychology Pool under age 18 can participate for class credit only.	
Comments	N/A	
Amendments	Date N/A	Post-approval Amendments None

This protocol can be continued for up to THREE years (Click here to enter a date.) by obtaining a continuation approval prior to Click here to enter a date.. Refer to the following schedule to plan your annual project reports and be aware that you may not receive a separate reminder to

complete your continuing reviews. Failure in obtaining an approval for continuation will automatically result in cancellation of this protocol. Moreover, the completion of this study **MUST** be notified to the Office of Compliance by filing a final report in order to close-out the protocol.

Continuing Review Schedule:

Reporting Period	Requisition Deadline	IRB Comments
First year report	10/31/2017	INCOMPLETE _____
Second year report	10/31/2018	INCOMPLETE _____
Final report	10/31/2019	INCOMPLETE _____

IRBN001

Version 1.3

Revision Date 03.06.2016

Institutional Review Board Office of Compliance Middle Tennessee State
University

The investigator(s) indicated in this notification should read and abide by all of the post-approval conditions imposed with this approval. [Refer to the post-approval guidelines posted in the MTSU IRB's website.](#) Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Amendments to this protocol must be approved by the IRB. Inclusion of new

researchers must also be approved by the Office of Compliance before they begin to work on the project.

All of the research-related records, which include signed consent forms, investigator information and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board

Middle Tennessee State University

APPENDIX B

Consent Form

Principal Investigator: Erin Loubé

Study Title: Does how well you overcome challenges relate to school success?

Institution: Middle Tennessee State University

Thank you for choosing to participate in this study. Please read the following information before you begin.

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

Purpose of the study:

The purpose of this study is to look at how resiliency, grit, mindset, adverse childhood experiences and positive childhood experiences correlate with academic success as measured by students' self-reported high school grade point average (GPA) and letter grades.

Description of procedures to be followed and approximate duration of the study:

You will be asked to fill out a variety of measures consisting of questions on resiliency, mindset, grit, adverse childhood experiences and positive childhood experiences. Adverse childhood experiences are negative or stressful life events that can cause childhood trauma and can have long lasting effects on a person's wellbeing and health. They include such topics as abuse, neglect, parental divorce and exposure to domestic violence. You will also be asked to report your high school GPA, high school letter grades and gender.

Expected costs:

\$0

Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

Participation in this study will take approximately 30 minutes of your time. The risk involved may be discomfort due to answering questions related to adverse childhood experiences.

Anticipated benefits from this study:

- a) The potential benefits are furthering knowledge on correlations between resiliency, grit, mindset, adverse childhood experiences, positive childhood experiences and school success. If there is a strong correlation between any of the measures, it can help inform ways to bolster students' school success.
- b) The potential benefits to you from this study are helping a fellow MTSU student complete their Master's thesis.

Compensation for participation:

There will be no financial compensation for participating in this study.

Circumstances under which the Principal Investigator may withdraw you from study participation:

Participants who do not complete the survey will be withdrawn from the study.

What happens if you choose to withdraw from study participation:

Your participation is completely voluntary. If you choose not to participate, there will be no penalty. If you choose to participate, you are free to withdraw at any time. Data obtained from participants who withdraw will not be used in any results.

Contact Information. If you should have any questions about this research study or possible injury, please feel free to contact (**Erin Loubé**) at (**404-641-6449**) or my Faculty Advisor, (**Dr. James Rust**) at (**615-898-2319**).

Confidentiality. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections if you or someone else is in danger or if we are required to do so by law.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

- Yes, I do consent to participate
- No, I do not consent to participate

APPENDIX C

Adverse Childhood Experiences Test

Check yes if you have experienced the situation or check no if you have not.

- | | | |
|---|-----|----|
| 1 Did a parent or other adult in your household swear at you, insult you, put you down, or humiliate you in front of others? | YES | NO |
| 2 Did a parent or other adult in your household often push, grab, slap, or throw something at you for something you did? | YES | NO |
| 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? | YES | NO |
| 4 Did you feel that no one in your family loved you, or they treated your goals as foolish and disparaged your successes? | YES | NO |
| 5 Did you often feel that you didn't have enough to eat, or had to wear dirty clothes, or your parents were too troubled to take care of you? | YES | NO |
| 6 Did your parents separate or divorce before you were 18? | YES | NO |
| 7 Was your guardian often pushed, grabbed, slapped, or had something thrown at them, or ever threatened with a weapon? | YES | NO |
| 8 Did you live with anyone who often got drunk or who used street drugs to cope with their problems? | YES | NO |
| 9 Was a household member depressed, mentally ill, or suicidal? | YES | NO |
| 10 Did a household member ever go to prison? | YES | NO |

Add up your "Yes" answers ____ That is your ACE score

APPENDIX D

Positive Childhood Experiences Test

Check yes if you have experienced the situation or check no if you have not.

- | | | |
|---|-----|----|
| 1 Did a parent or other adult in your household often praise you for your real accomplishments, and sometimes in front of other people? | YES | NO |
| 2 Did a parent or other adult sometimes give you special gifts or other unexpected honors for things you did? | YES | NO |
| 3 Did an adult or other person 5 years older than you ever give you responsibility to perform important and potentially costly actions? | YES | NO |
| 4 Did you always feel that your family members loved you, acknowledged your efforts and successes and said that you were productive? | YES | NO |
| 5 Did you always feel that you had plenty to eat, clean clothes available, a safe home, and someone to protect you if necessary? | YES | NO |
| 6 Were your parents always eagerly supporting each other and you? | YES | NO |
| 7 Was your guardian always safe and secure and would they defend your rights against other people who might try to bully you? | YES | NO |
| 8 Did any adult you lived with purposefully solve family problems with organized discussions, where you had a personal time to speak? | YES | NO |
| 9 Did anyone you lived with work in volunteer programs? | YES | NO |
| 10 Did a household member ever receive a public-sponsored award? | YES | NO |

Add up your “Yes” answers ____ This is your PCE score.

APPENDIX E

Self-Reported High School Grade Point Average and Letter Grades

All As = 4.0	Mostly As and Bs = 3.5
All Bs = 3.0	Mostly Bs and Cs = 2.5
All Cs = 2.0	Mostly Cs and Ds = 1.5
All Ds = 1.0	Mostly below Ds = 0.5

APPENDIX F

End of Survey Page

Thank you for your time and participation! Your responses are greatly appreciated!

If any of the questions have caused you distress or triggered something you want to talk about please reach out to free MTSU Counseling Services in Keathley University Center, room 326-S at 615-898-2670.