

THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND
PERCEIVED SOCIAL SUPPORT IN COLLEGE STUDENTS

by

Evelyn Grace Abbott Salazar

A Thesis Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Arts

Middle Tennessee State University

May 2021

Thesis Committee:

Dr. Seth J. Marshall

Dr. James O. Rust

Dr. Kimberly Ujcich-Ward

THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND
PERCEIVED SOCIAL SUPPORT IN COLLEGE STUDENTS

by

Evelyn Grace Abbott Salazar

Dr. Seth J. Marshall, Committee Chair

Dr. James O. Rust, Committee Member

Dr. Greg Schmidt, Psychology Department Chair

Dr. David Butler, College of Graduate Studies

TABLE OF CONTENTS

LIST OF FIGURES.	v
LIST OF TABLES.	vi
CHAPTER I: INTRODUCTION	1
Adverse Childhood Experiences.	1
Social Support	3
Theoretical Models of Social Support	7
ACEs and Social Support	10
Purpose & Hypotheses	13
Hypothesis One	13
Rationale	13
Hypothesis Two	14
Rationale	14
CHAPTER II: METHODOLOGY	15
Research Approval	15
Participants	15
Measures	16
Measures of Social Support	16
Measures of ACEs	16
CHAPTER III: RESULTS	19
CHAPTER IV: DISCUSSION	25
Hypothesis One	25

Hypothesis Two	26
Limitations and Future Directions	26
Conclusion	28
REFERENCES	29
APPENDICES	41
APPENDIX A: Adverse Childhood Experience Questionnaire	41
APPENDIX B: Social Provisions Scale Questionnaire	42
APPENDIX C: Institutional Review Board Approval	44

LIST OF FIGURES

Figure 1. Mechanism by which adverse childhood experiences influence health and well-being throughout the lifespan	12
Figure 2. Table depicting ACEs and social provisions scale	22
Figure 3. Table depicting total ACE scores	23
Figure 4. Table depicting total social provisions scale scores	24

LIST OF TABLES

Table 1. Social provisions model by Weiss, 1974	10
Table 2. Mean, standard deviations, and correlations for adverse childhood experiences scores and outcome variables	19
Table 3. Simple regression analysis of adverse childhood experiences scores predicting global social support scores (N = 395)	20
Table 4. Simple regression analysis of adverse childhood experiences scores predicting social integration scores (N = 395)	21

ABSTRACT

There is a current lack of studies that investigate how adverse childhood experiences (ACEs) predict difficulties with social competency skills. To address this, the current study analyzed how self-reported ACEs predicted six social support competencies, namely, attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. College students ($N = 338$) were administered the ACE Questionnaire, (Felitti, et al., 1998) and the Social Provisions Scale (Cutrona & Russell, 1987). Results indicated that ACE scores significantly predicted more difficulty with overall social support skills. Results generally document the presence of a cumulative effect, that is, more ACEs are associated with more difficulty with social competencies in a non-clinical U.S. sample of college students.

CHAPTER 1: INTRODUCTION

Overview

Though trauma can strike at any time and any age, there is a general consensus that childhood trauma tends to be particularly problematic. In a landmark study by Felitti, Anda, and colleagues (1998), researchers documented that adverse childhood experiences (ACEs) were related to problematic and long-lasting outcomes across the lifespan. This finding paved the way for an expanding body of research that documents the relationships between ACEs and a variety of health outcomes in children and adults. For example, studies have documented that ACEs are linked to a variety of health problems such as chronic insomnia (Bader, et al., 2007; Sullivan, et al., 2019), asthma in children and in adults (Exley, et al., 2015; Stein, et al., 2013), being overweight or obese (Davis, et al., 2019; Maunder, et al., 2019), cardiovascular disease (Flores-Torres, et al., 2020), and immune system function (Lo Iacono, et al., 2018; Slopen, et al., 2013). Essentially, ACEs are linked to many aspects of an individual's physical health.

Further, correlations of ACEs on mental health are also well established. For example, a growing body of studies research the link between ACEs and many mental health conditions such as childhood and adulthood major depression (Merrick, et al., 2017; Schofield, et al., 2013) and substance abuse behaviors (Hughes, et al., 2019; Loudermilk, et al., 2018), obsessive-compulsive disorder (Briggs & Price, 2009), and attention-deficit hyperactivity disorder (Brown, et al., 2017; Jimenez, et al., 2017). Since trauma often impacts one emotionally, it is unsurprising that ACEs would have a corresponding impact on the mental health of individuals.

Adverse Childhood Experiences

Health-oriented professional organizations generally acknowledge that ACEs are traumatic events that occur once or repeatedly. The World Health Organization describes ACEs as intense and frequently occurring stress that children experience early on in life. The American Academy of Pediatrics describe ACEs as events that contribute to a prolonged activation of the body's stress response systems, and that this occurs more readily in the absence of a supportive adult relationship to act as a buffer between the stress and the child (American Academy of Pediatrics, 2014). ACEs are viewed as aspects of children's lives that erode their sense of stability, safety, and bonding with parents or other caregivers. ACEs are defined by the United States Center for Disease Control as a potentially traumatic event that occurs during childhood, specifically ages 0 to 17, and can include experiencing or witnessing such things as violence, abuse, and neglect (Centers for Disease Control, 2020). Generally, there are multiple operational definitions of ACEs.

Researchers typically recognize ten ACEs: physical, emotional, or sexual abuse, physical or emotional neglect, and household dysfunction, defined as domestic violence, divorce or separation, or living with an adult currently experiencing mental illness, substance use or misuse, or incarceration (Felitti, et al., 1998). Sacks, et al. (2014) report that of the ten ACEs from the original Felitti et al. study, the most common ACEs are divorce, substance use or misuse, living with an adult currently experiencing mental illness, and domestic violence. Although only ten ACEs were originally studied, researchers agree that there are other common childhood experiences that qualify as

traumatic events, and that these ten are not a complete list (Park, et al., 2020). Even now, researchers are expanding this list as more research is conducted. Though there are potentially more than 10 ACEs, researchers by and large agree that the 10 ACEs described by Felitti et al. (1998) are fairly comprehensive.

ACEs are much more common than one might realize. Current research estimates as much as 52% to 67% of the general adult population has at least one ACE, and 8.7% of the population having five or more ACEs (Esaki & Larkin, 2013). According to Sacks, et al. (2014), generally speaking, as a child ages, the prevalence of ACEs in their life increases. Just under half (approximately 46%) of children in the United States have experienced one ACE. Sacks and colleagues further report that the greatest negative risk is associated with the experience of multiple ACEs. In a study by Windle, et al., in 2018, they found that approximately 21.3% of undergraduate students (ages 18 to 25) have at least one ACE, with 12.4% of their participants having 4 or more ACEs. These numbers parallel research completed by the CDC, with 26.0% of 18 to 25 year olds having 1 ACE, and 12.5% of that same age group having 4 or more ACEs. The research on the prevalence of ACEs has led to the discovery of what is known as the staircase effect.

Additional research has supported the dosage effect or “staircase” effect of ACEs. This is the compounding risk of ACEs. That is, the more ACEs one experiences, the higher the risk for developing chronic physical and mental health problems. For example, Edwards, et al., (2003) reported that the risk for a variety of negative outcomes such as low mental health scores and poorer physical health was positively correlated with the number of ACEs in their research specific to different types of abuse. They found that as

exposures to multiple types of abuse increased, the mental health scores of their participants decreased. In this study, a higher mental health score indicated better overall mental health. 43% of their participants met criteria for at least one of the six types of abuse outlined in this study. Of that 43%, 34.6% reported experiencing at least two types of abuse during childhood. These researchers found that rates of anxiety, depression, and anger/aggression were higher and significantly correlated in those who had experienced multiple types of trauma.

Similarly, Finkelhor, et al. (2007), reported that 69% of their sample had experienced more than one type of trauma, and 7% of their sample had experienced 7 or more types of trauma. Anda, Tietjen, Schulman, Felitti, and Croft (2010), reported a dose-response effect between the number of ACEs experienced and the frequency of headaches experienced as an adult—the more ACEs, the more headaches. These examples of studies highlight that there is a dosage effect or “staircase” effect where more ACEs are associated with increased health problems.

This dosage effect has been conceptualized in a variety of ways. The Center for Disease Control’s version of the “ACE Pyramid” is one model that visually illustrates the compounding dosage effect of ACEs (Felitti, et al., 1998). According to this model, as the amount of ACEs experienced increases, so do the detrimental physical and mental health effects. Initially, this model suggests that ACEs disrupt neurodevelopment and this impacts social deficits and emotional impairment. These in turn potentially lead to engagement in health risk behaviors, like substance abuse, smoking, and excessive drinking, which then are associated with the development of disease, disability, and

social problems. Examples can include heart disease, obesity, chronic illness, and the inability to maintain healthy and stable relationships. Ultimately, this can result in an early death. This pyramid model has utility in that it generally highlights the developmental relationship between ACEs and various impacts in an individual's life.

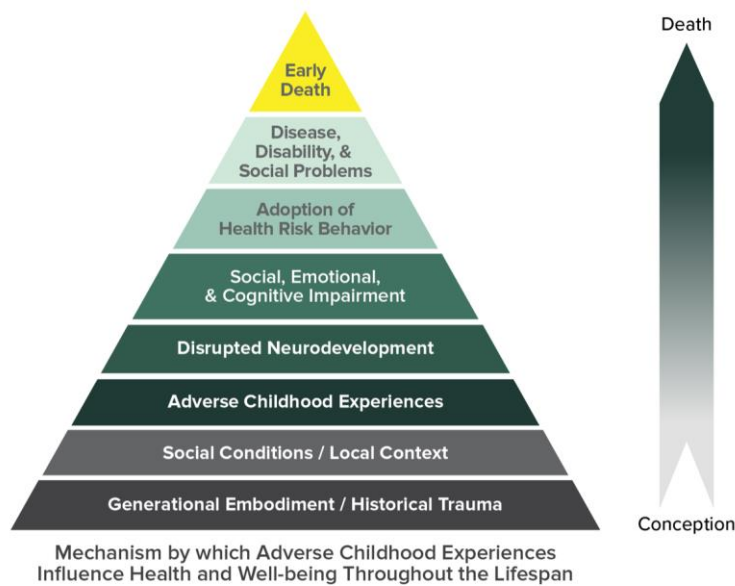


Figure 1

Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

Social Support

The second main variable of this study is social support. Researchers widely acknowledge that social support is an important construct. Humans are, by nature, sociocultural beings (Maris, 2019). We instinctively seek out socialization to feel emotionally connected and supported by family, friends, colleagues, and many others

(Maris, 2019). Essentially, feeling supported socially is a fundamental need and a key part of the human experience. Likewise, providing social support to individuals who are struggling psychologically is also a natural human response (Malecki & Elliott, 1999). Correspondingly, the importance of this construct is reflected in a growing body of research that focuses on many of the aspects related to social support.

Social support is a complex concept that has been defined in a myriad of ways. For example, Sippel, et al., (2015) define social support as a network of emotional and physical resources designed to increase an individual's ability to cope with stress. Cooke, et al., (1988) defined social support as having four main facets: emotional support, instrumental support, informational support, appraisal support. Still others define it as a sense of belonging to a community and routine interactions with community members, (Townley, et al., 2013). Though there are a variety of definitions in the literature, researchers generally agree that social support involves the perceived availability of multiple kinds of emotional and physical support through a person's various interpersonal relationships.

Research suggests that social support can guard against mental health conditions. Social support has been associated with an individual's quality of life (Lodhi, et al., 2019), and with mental illnesses, such as depression (Ahn, et al., 2017) and schizophrenia (Degnan, et al., 2018). For example, studies have linked the construct to an effective protective factor against depression (Bjornestad, et al., 2019; Wang, et al., 2018). Social support has also been shown to have a positive, mitigating correlation on stress (Karaca, et al., 2019). It has been linked to many positive mental health outcomes (Tajvar, et al.,

2018). Further, those suffering from complicated grief after the loss of a loved one to suicide can expect social support as a helpful postvention (Oexle & Sheehan, 2020). These findings document that social support is linked to mental health outcomes.

In addition to correlating with mental health, social support has also been found to relate to a variety of physical health outcomes such as respiratory illness like the common cold (Cohen, et al., 2015), and other somatic complaints (Herrenkohl, et al., 2016). Poor social support has also been linked to obesity, lack of physical activity, and smoking (Wang, et al., 2018). Researchers studying end stage liver disease found that perceived social support was significantly related to a patient's physical resilience while awaiting liver transplant surgery (Swanson, et al., 2018). Further, studies have assessed the moderating effect of social support on the general physical health in elderly patients (Zhang, et al., 2018). Overall, research supports that social support is significantly linked with a variety of aspects related to physical health.

Theoretical Model of Social Support. To date, one of the leading theoretical models of social support is Weiss's theory of the function of social relationships (Weiss, 1974). For the purposes of the current study, we will rely on this model that purports that social support relies on six factors: attachment, social integration, reassurance of worth, guidance, reliable alliance, and opportunity for nurturance. Each of these social support factors are described below.

Attachment refers to emotional support that is typically found between romantic partners, friends, and family. An individual's ability to form attachments with those around them depends on healthy social development. Experiencing attachments to other

people is a key aspect of social support and fosters a sense of belonging. Without attachment, individuals may feel emotional loneliness.

Social integration is defined as the sense of belonging one feels when involved in a group that shares common interests. Another important feature of social development, those who don't feel socially integrated with their peers often feel ostracized or become targets of bullies for being "different." When social integration is lacking, an individual can feel socially isolated.

The next factor of this model, *reassurance of worth*, is the recognition by others that one has skills and competence. If a person is not adept at peer interaction due to the trauma they have experienced, this could lead to a low sense of self-worth, as they are not being reinforced as worthy by their peers. When reassurance of worth is missing from a person's life, they may be more prone to lower self-esteem and well-being.

In this model, *guidance* refers to advice or information given from social partners that the individual sees as trustworthy and dependable. In Weiss's original theory, he posits that if one is lacking in guidance from trusted family and friends, that person's anxiety and stress levels may be higher, affecting one's ability to engage socially (Perera, 2016). When this facet of social support is lacking, individuals may experience more anxiety and self-doubt.

The factor of *reliable alliance* focuses on the assurance that social relationships provide tangible help and aid when needed. This goes back to having reliable friend and family connections. When individuals experience trauma, these connections are often

shaky or difficult to develop. Without reliable alliances within their relationships, individuals may experience more stress and anxiety as a result of relying solely on themselves for emotional support.

Lastly, according to Weiss's 1974 model *opportunity for nurturance* is the idea that an individual is responsible for the care of others. This means that individuals both have a responsibility to nurture others in their relationships, but are also responsible for seeking out nurturance themselves. (Perera, 2016). Having responsibilities often give individuals purpose and a sense of fulfillment. When this is missing from healthy relationships, it can leave an individual feeling devoid of meaning.

This theory incorporates many aspects of social support that college students may experience.

Table 1

Social Provisions Model by Weiss, 1974

Social Factor	Description
Attachment	Emotional support typically found between romantic partners, friends, and family.
Social Integration	The sense of belonging one feels when involved in a group that shares common interests.
Reassurance of Worth	The recognition by others that one has skills and competence.
Guidance	Advice or information given from social partners seen as trustworthy and dependable.
Reliable Alliance	The assurance that social relationships provide tangible help and aid when needed.
Opportunity for Nurturance	The idea that an individual is responsible for the care of others.

ACEs and Social Support

Recently researchers have investigated the potential relationships between ACEs and social support related variables, though oftentimes studies investigate the third factors such as how social support impacts mental health and physical health. For example, Cheong, et al., (2017) investigated the mitigating aspect of social support on the relationship between ACEs and depression. They investigated later-life depressive symptoms in Irish adults with the intention of exploring whether perceived social support played a moderating role of later-life depression. Participants ($N= 2,047$) were both men and women and aged 50 to 69. 23.7% reported at least one ACE. In addition to ACE information, the participants were also asked to complete the Oslo Social Support Scale

regarding their perceived social support. The researchers found that the participants who reported multiple ACE exposures had higher levels of depression later in life, but only in those who also reported poor levels of perceived social support. Those who had the same number of ACEs but moderate or strong levels of perceived social support had lower levels of depression later in life. Although this was not an experimental study, the authors used statistics to enter variables into predictive equations and were able to legitimately conclude that social support may reduce the burden of depression later in life.

Appleton, et al., 2019, investigated the potential link between social support and a decrease in the negative effects of maternal ACEs during pregnancy. There is a body of research that addresses the negative effects of maternal ACEs on children in utero, but not much has been researched on how social support decreases those negative effects. The cohort of mothers ($n = 126$) were assessed using the original ACEs questionnaire from the 1998 study (Felitti, et al., 1998). Their perceived social support was mapped using the Interpersonal Support Evaluation List, which focused on measuring the perceived availability of social support and resources. The researchers found that although ACEs posed a risk to pregnant mothers, a resiliency effect, or a decreased likelihood of asymmetrical fetal growth, was observed in those who reported high levels of social support while pregnant. The authors used a statistical regression analysis and concluded that social support during pregnancy generally decreased the negative effects of maternal ACEs, such as low birth weight, emergency Cesarean section, and gestational size, on newborn infants.

Wan, et al., 2019, studied the interaction between social support and ACEs, and the relationship these two had with self-injurious behavior and suicidality in students 10 to 20 years of age ($N=14,820$). These researchers aimed to investigate if perceiving social support in their lives would relate to decreased self-injurious behavior and suicidality. Both ACEs and social support were measured using questionnaires. Non-suicidal self-injurious behaviors were defined as “in the past 12 months, have you ever harmed yourself in a way that was deliberate, but not intended to take your life?” Suicide ideation was defined as any thought about killing yourself over the past 12 months, and suicide attempts were defined as an attempt to kill themselves within the past 12 months. Results indicated that social support influenced non-suicidal self-injury, suicidal thinking, and suicide attempts. Social support played a significant role in preventing these thoughts and behaviors.

In a study by Karatekin and Ahluwalia (2020), the researchers studied the relationship of ACEs and social support and how these factors correlated with the physical health of college students. Participants were undergraduates ($N=321$) that responded to an online questionnaire. The study measured ACEs by adapting the Juvenile Victimization Questionnaire and adding questions from the original ACEs study survey. Social support, stress, health, and parental education were likewise measured with self-report surveys. Results indicated that social support and ACEs correlated with the health of college students, but that stress was the biggest factor. The authors were certain that based on the reports of their subjects, some stressful events should be categorized as ACEs even though

they were not involved in the original study. These seemingly critical but unstudied factors included social isolation, victimization, and perceived discrimination.

Purpose and Hypothesis

Because of the continued rise of mental and emotional health problems in college students, more research is needed to investigate how, and to what degree, ACEs predicts perceived social support. To address this, the current study will research whether there is an ACEs dosage effect or “staircase” effect in terms of overall perceived social support and specific domains of social support. I will also seek to explore the relationships between childhood ACEs and social support, and the impact this relationship has on the social provisions of college undergraduates. Researchers have not yet looked at the relationship between ACEs and social support through the lens of Weiss’s (1974) theoretical model of six social support factors. Moreover, this research addresses a shortage in the research as this topic has not been extensively explored in undergraduate college students.

Hypothesis One: It is hypothesized that higher ACEs scores, as measured by the ACE questionnaire, will significantly predict deficits in overall perceived social support as measured by the Social Provisions Scale.

Rationale: It is assumed that ACEs have a potential impact on the social aspect of one’s life, as trauma changes how we interact with those around us. Aspects of social support such as attachment, social integration, reassurance of worth, guidance, reliable alliance, and opportunity for nurturance are frequently part of the human experience and can be negatively impacted when a person is exposed to trauma. These changes are

compounded when exposed to multiple traumas. It is reasonable to assume, then, that this staircase effect will be evident in the six aspects of social development measured by the Social Provisions Scale.

Hypothesis Two: It is hypothesized that ACEs relates to an individual's ability to successfully socially integrate, an ability that is directly correlated to the dosage effect. I expect that more doses equate to a more difficult time with social integration.

Rationale: Though there are multiple aspects to social support, a person's reassurance of worth appears to be particularly impacted by trauma. ACEs can have a negative impact on one's reassurance of worth, which in turn affects one's self esteem. These issues can become compounded when it comes to making friends and fitting in. It is reasonable to assume that due to the significant impact ACEs has on social function, an individual would have a harder time finding their place within social groups.

CHAPTER II: METHODS

Note: Data for the current study are archival. The participants attended Middle Tennessee State University.

Participants

Participants in this study were undergraduate college students ($N = 338$, 230 females and 158 males). They were recruited from a regional university located in the southern United States. In order to participate, the participants were required to comprehend both written and spoken English. They were also required to give their written consent before participating in the study. During a 30-minute laboratory session, the subjects completed individual, self-reported instruments.

The sample for this study was comprised of students from the following age categories: (a) 18 year olds ($n = 98$) made up 25% of the sample; (b) 19 year olds ($n = 120$) made up 31% of the sample group; (c) 20 year old students ($n = 70$) took up 18% of the sample group; (d) 8% of the sample group were 21 years of age ($n = 32$); and (e) 18% of the participants were aged 22 years or older. The students also volunteered information regarding their ethnicity: 57.5% were Caucasian ($n = 223$), 25.5% reported they were African American ($n = 99$), 3.8% of the students were Asian ($n = 15$), 3.6% of the population were Hispanic or Latino ($n = 14$), 0.5% were Native American or an Alaskan Native ($n = 2$), 0.3% identified themselves as Pacific Islander ($n = 1$), and 8.8% of the participants identified as other ($n = 34$).

Measures

Social Support measure. The Social Provisions Scale (SPS; Cutrona & Russell, 1987) was developed to evaluate a person's perceived social support. Social support theory was originally put forth by the psychiatrist Dr. Robert Weiss in 1974. He posited that social ties provide support, and that specific social ties could meet an individual's social needs. Weiss's theory addressed the social function of specific social roles (spouse, friend, family member) during life-altering events (Perera, 2016).

The scale consists of 24 items based on the six social provisions proposed by Weiss (1974) and defined in chapter one: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance (Perera, 2016). The scale is designed to generate a whole-scale score as well as 6 subscale scores for each of the domains. In a study by Chiu, Motl, and Ditchman, the researchers found the Social Provisions Scale to have a reliability of .89 for the global score, with the 6 subtests ranging from .65 to .90 (Chiu, et al., 2016). When considering the scale's internal consistency coefficients, Cronbach's alpha was .89. The researchers found this to be similar to results of previous studies, suggesting that the items are indeed measuring the functions of social provisions.

ACEs. Adverse Childhood Experiences were measured with the ACE Questionnaire (Felitti, et al., 1998), a self-report questionnaire designed to assess the number of adverse experiences a participant has experienced from birth through the age of 18 years. This questionnaire is widely used by practitioners in clinical settings, but it is also used by researchers and large research organizations such as the World Health

Organization, Center for Disease Control and Prevention, and the U.S. Department of Health.

The ACEs questionnaire is short, being made up of 10 questions that are answered either yes or no. The first question addresses emotional abuse experienced by the participant during childhood with the question “did a parent or other adult in the household often swear at you, insult you, put you down, humiliate you, or act in a way that made you afraid that you might be physically hurt?” In question number two, the focus switches to physical abuse: “did a parent or other adult in the household often push, grab, slap, throw something at you, or ever hit you so hard that you had marks or were injured?” The third question addressed sexual abuse with “did an adult or person at least 5 years older than you ever touch, fondle you, have you touch their body in a sexual way, or try to actually have oral, anal, or vaginal sex with you?”

The fourth question, emotional neglect, asked “did you often feel that no one in your family loved you, 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 fifth question considered physical neglect, asking participants “did you 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?”

The sixth question asked about household dysfunction stemming from divorce experienced before the age of 18: “Were your parents ever separated or divorced?” In the seventh question, household dysfunction in the form of treatment of mothers is addressed with “was your mother or stepmother: often pushed, grabbed, slapped, or had something

thrown at her, sometimes or often kicked, bitten, hit with a fist, or hit with something hard, ever repeatedly hit over at least a few minutes or threatened with a gun or knife?” In question eight, substance abuse in terms of household dysfunction is addressed with “did you live with anyone who was a problem drinker or alcoholic or who used street drugs?”

The ninth question focused on mental illness and asked participants “was a household member depressed or mentally ill or did a household member attempt suicide?” The tenth and final question asked participants about any incarcerated family members they had while growing up with “did a household member go to prison?” As outlined in the ACE Questionnaire, scoring procedures were followed to calculate the ACE score for each participant by totaling the number of “Yes” responses. Each “Yes” response equaled one point while each “No” response was worth zero points. In order to calculate the total score, all points were summed. Higher scores indicate a higher ACE score, or that the individual experienced more ACEs.

Procedure

The current study utilized archival data by the thesis chair member, Dr. Seth Marshall. Internal Review Board approval was obtained (see Appendix B). Additionally, these findings are limited due to how the ACE Questionnaire defines an adverse childhood experience. The questionnaire does not address poverty, paternal violence, community violence, or discrimination, all of which could significantly influence the results of this study.

CHAPTER III: RESULTS

Hypothesis 1

Means, standard deviations, and correlations were examined for participants' Adverse Childhood Experiences (ACE) scores and Social Provisions Scale scores (see Table 2).

Table 2

Mean, Standard Deviations, and Correlations for Adverse Childhood Experiences Scores and Social Provision Scale Scores and Subscales (N = 395)

Measures	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.
1. ACE Total	2.09	2.09	-						
2. SPS Total	80.1	11.9	-0.23**	-					
3. Social Integration	13.4	2.33	-0.22**	0.81**	-				
4. Attachment	13.3	2.67	-0.20**	0.88**	0.67**	-			
5. Reassurance of Worth	13.0	2.37	-0.23**	0.79**	0.58**	-0.63**	-		
6. Reliable Alliance	14.1	2.32	-0.26**	0.83**	0.59**	0.70**	-0.59**	-	
7. Guidance	13.9	2.56	-0.24**	0.86**	0.63**	0.76**	0.63**	0.81**	-
8. Opportunity for Nurturance	12.4	2.71	0.07	0.57**	0.41**	0.42**	0.34**	0.30**	0.30**

*Note. All scores based on raw scores, * $p < .05$. ** $p < .001$*

This study's first main purpose was to investigate how ACEs (i.e., the ACEs Total) predicted individuals' overall perceived social support as measured by the Social Provisions Scale (i.e. SPS Total). To address this purpose, one simple regression was conducted. Findings confirmed that the ACE Total significantly predicted the Social Provisions Scale Total ($R^2 = -0.23$, adjusted $R^2 = 0.05$, $F(1, 393) = 21.1$, $p < .001$) (see

Table 3). The ACE Total scores accounted for approximately 5% of the variance of GEC scores in the sample.

Table 3

Simple Regression Analysis of Adverse Childhood Experiences Scores Predicting Global Social Support Scores (N = 395)

Variable	<i>B</i>	<i>SEB</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Total SPS	-1.29	0.28	-.23	-4.64	< .001
<i>R</i> ²		0.05			

Hypothesis Two:

This study's second main purpose was to determine if more ACE doses would contribute to an individual having a more difficult time with social integration. Correlational analysis results indicated that there was a significant change in the prediction of ACE scores ($R^2 = -0.22$, adjusted $R^2 = 0.48$, $F(1, 393) = 20.8$, $p < .001$). The ACE Total scores accounted for approximately 5% of the variance of GEC scores in the sample.

Table 4

Simple Regression Analysis of Adverse Childhood Experiences Scores Predicting Social Integration Scores (N = 395)

Variable	<i>B</i>	<i>SEB</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Social					
Integration	-0.20	0.04	-0.22	-4.57	< .001
<i>R</i> ²		0.05			

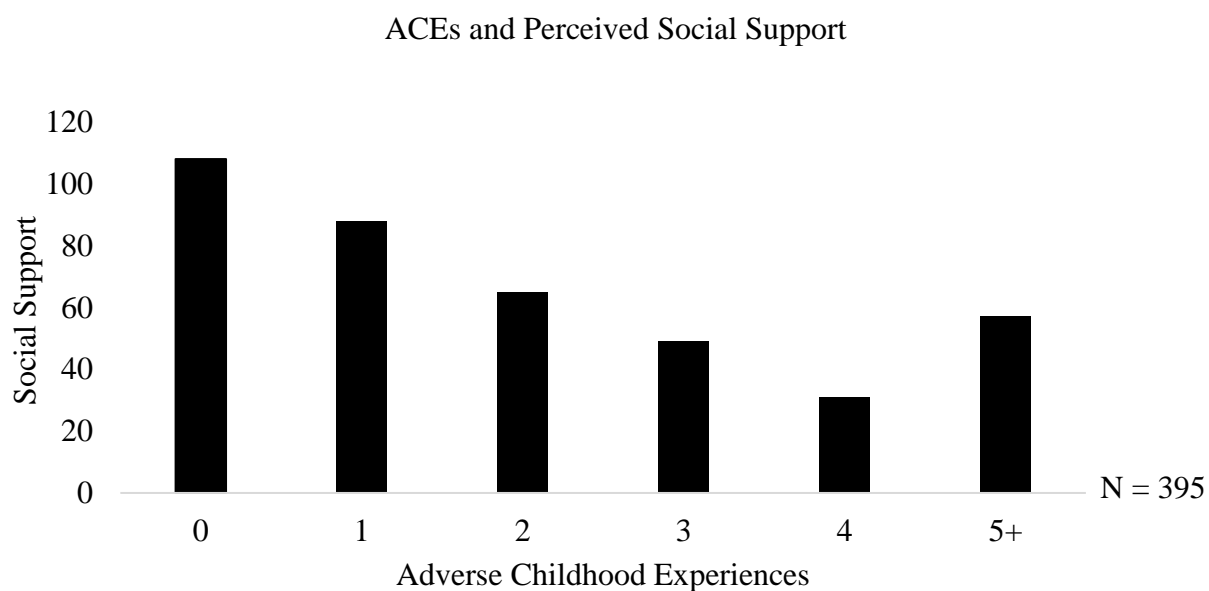


Figure 2.

ACEs and Perceived Social Support

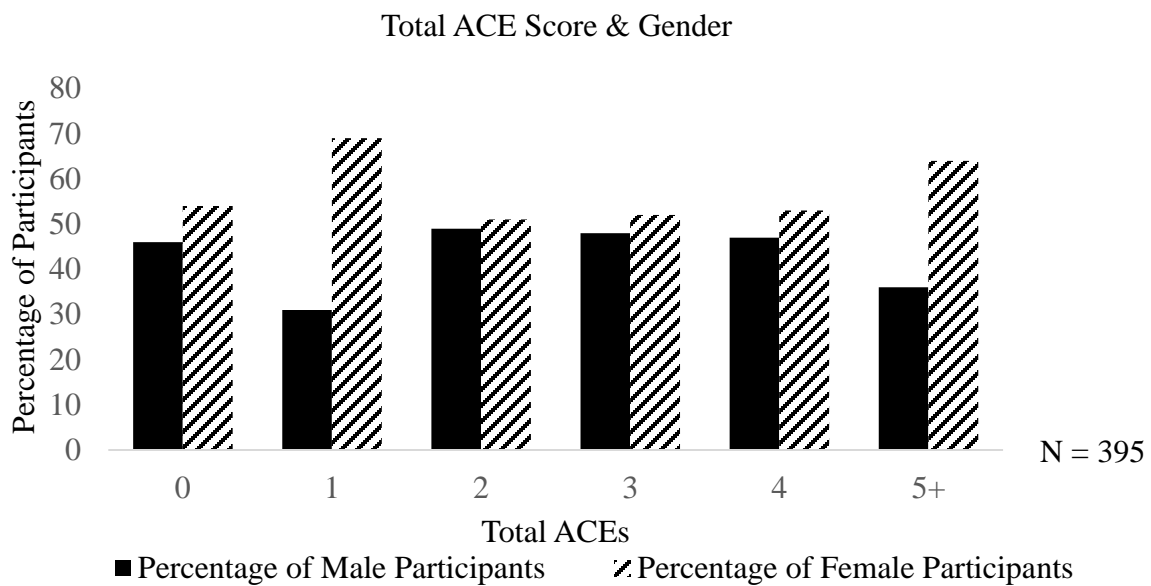


Figure 3.

Total ACE Score & Gender

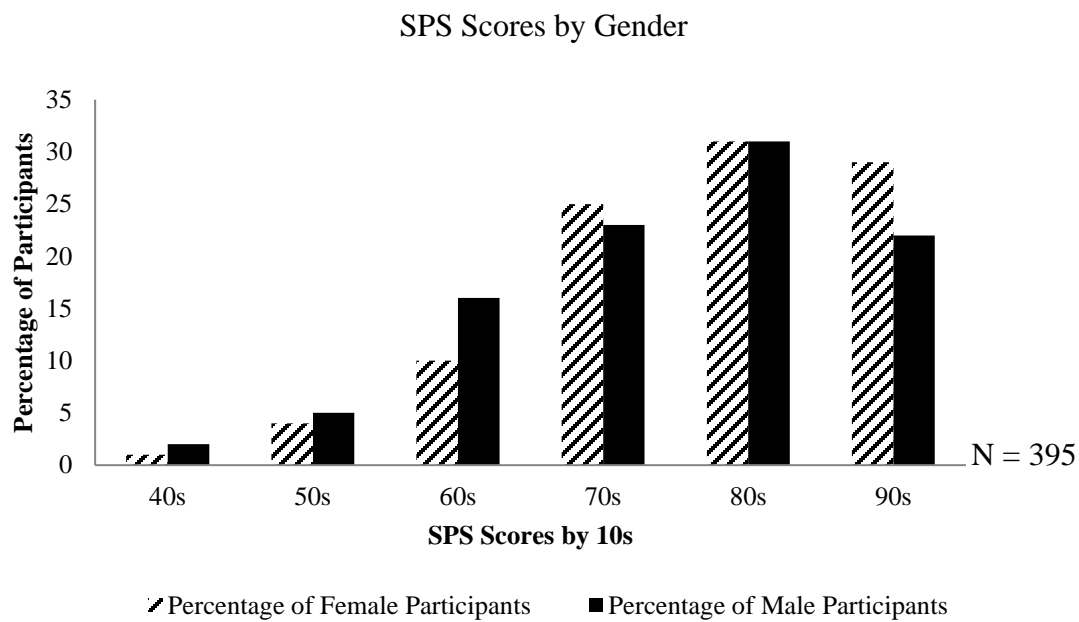


Figure 4.

Social Provisions Scale Scores by Gender

CHAPTER IV: DISCUSSION

Hypothesis One

This study first investigated whether ACEs predicted perceived social support. As hypothesized, total ACE scores significantly predicted total SPS scores. This is noteworthy as it supports the theory that experiencing trauma impacts an individual's ability to socially interact with other people. That said, the relationship between ACEs and social support dimensions was weak to moderate. These two variables are indeed related, but not strongly. One explanation of this finding is related to the ACE Pyramid described in chapter one of this thesis (Felitti, et al., 1998). Multiple studies have documented that ACEs disrupts neurodevelopment. For example, Wilson (2020) reported that increased ACEs significantly predicted weaker neurodevelopment, or more difficulty with core dimensions of executive functioning skills that help regulate thought, emotion, and behavior. The thinking is that this neurological disruption may set the stage for more difficulty in establishing, maintaining, and navigating social and interpersonal relationships. Moreover, this study documented a staircase effect or a problematic cumulative effect. The more ACEs that were experienced, the lower levels of reported social integration, guidance, and attachment among other social support competencies. This corresponds with previous research has linked ACEs to social competencies. For example, Choi, et al (2020) reported that early trauma was linked to difficulty with attachment. ACEs that disrupted secure attachments between children and their caregivers were significant predictors of increased behavioral difficulties. Likewise,

Liotti (2004) also found that trauma led to disorganized attachment and started as early as infancy.

Hypothesis Two

Secondly, this study investigated how the number of ACEs predicted an individual's ability to successfully socially integrate with others. This ability to socially integrate is just one subcomponent of the overall ability to feel socially supported. As hypothesized, total ACE scores significantly predicted decreased social integration. However, the relationship between ACEs and the social integration dimension was weak to moderate. Even so, this is an important finding that supports the notion that ACEs are tied to social integration skills. It is important to note that research is limited in this area. Corrales, et al, (2016) reported that ACEs were linked to difficulty with developing a sense of belonging later on in life. However, most of the research links ACEs to traditional attachment variables. For example, Erozkhan (2016) documented that ACEs were negatively related to a secure attachment and positively related with fearful, preoccupied, and dismissing attachment styles. Our results pertaining to Hypothesis Two focus more on social integration or a sense of belonging that one experiences in a group with common interests.

Limitations and Future Research

It is important to note that there are significant limitations within this study. Firstly, we only included the ten ACEs that were included in the original study (Felitti, et al, 1998). However, there are other important ACEs that were not included in our study. For example, poverty, systemic racism, death of a loved one, and other potential ACEs

were not included in the current study. Additionally, details surrounding the experienced ACEs were not gathered. For example, it might be important to consider the age, timing, duration, and severity of the ACEs reported. For example, parental divorce can be experienced differently if it was an amicable divorce or a hostile divorce. The age that an ACE is experienced was not reported in our study, but is potentially an important consideration. Specific ages may play a role in the level of intensity experienced.

Another limitation of this study pertains to social support and how it is defined by researchers. For the purposes of this study, we used Weiss's six social constructs. However, there are other theoretical models of social support that may include additional social support variables that were not included in this study. Additionally, the sample of this study included college students, primarily in their late teens and early twenties. There may be merit to broadening the age-range of the sample and investigating the relationship between ACEs and social competencies later in the lifespan. Another limitation is related to correlational nature of this study. Although this study did reveal weak to moderately significant correlations between ACEs and social support, we cannot assume cause and effect between the variables.

Future studies that investigate ACEs and social support may consider investigating gender differences. In the current study, it appears that there are observable differences in the data between male and female participants with a reported 5 or more ACEs. Female participants reported 5 or more ACEs more frequently than the male participants. Further, female participants also reported experiencing the ACE of

divorce more than male participants. Future studies, may also consider incorporating interventions for ACEs to mitigate the lifelong effects (e.g., McKelvey et al. ,2017).

Conclusion

Our findings generally support the main premise of this study, mainly that ACEs are associated with decreases in social support and more difficulty with interpersonal functioning. However, the relationships between ACEs and these social support areas, though significant, were weak to moderate. Overall, self-ratings of ACEs successfully predicted lower amounts of perceived social support in college-aged students. Our results documented a staircase effect or a problematic cumulative effect between ACEs and social support. This finding was mirrored when looking specifically at one component of social support, namely social integration.

In terms of applying these findings clinically, a growing body of research suggest that increased social supports can buffer against the negative impact of ACEs (e.g., Cheong, et al., 2017). Our study highlights potential areas of social support that are linked to ACEs and can be targeted for intervention. For example, in working with individuals that have experienced ACEs, interventions might include: strategies to establish and maintain healthy relationships, skills to find guidance, mentorship, and attachment, and mapping out opportunities to increase social integration among others.

References

- Ahn, S., Seonghoon, K., & Zhang, H. (2017). Changes in depressive symptoms among older adults with multiple chronic conditions: Role of positive and negative social support. *International Journal of Environmental Research and Public Health*, *14*(16), 1-11. <http://doi.org/10.3390/ijerph14010016>
- American Academy of Pediatrics. (2014). *Adverse Childhood Experiences and the Lifelong Consequences of Trauma* [PDF]. https://www.aap.org/en-us/documents/ttb_aces_consequences.pdf
- Anda, R., Tietjen, G., Schulman, E., Felitti, V., & Croft, J. (2010). Adverse childhood experiences and frequent headaches in adults. *Headache*, *50*, 1473-1481. <http://doi.org/10.2010.01756.x>
- Appleton, A. A., Kiley, K., Holdsworth, E. A., & Schell, L. M. (2019). Social support during pregnancy modifies the association between maternal adverse childhood experiences and infant birth size. *Maternal and Child Health Journal*, *23*, 408-415. <https://doi.org/10.1007/s10995-018-02706-z>
- Bader, K., Schafer, V., Schenkel, M., Nissen, L., & Schwander, J. (2007). Adverse childhood experiences associated with sleep in primary insomnia. *Journal of Sleep Research*, *16*, 285-296.
- Bjornestad, A., Brown, L., & Weidauer, L. (2019). The relationship between social support and depressive symptoms in midwestern farmers. *Journal of Rural Mental Health*, *43*(4), 109-117. <http://dx.doi.org/10.1037/rmh0000121>
- Briggs, E. S., & Price, I. R. (2009). The relationship between adverse childhood

experience and obsessive-compulsive symptoms and beliefs: The role of anxiety, depression, and experiential avoidance. *Journal of Anxiety Disorders*, 23, 1037-1046. <http://doi.org/10.1016/j.janxdis.2009.07.004>

Brown, N. M., Brown, S. N., Briggs, R. D., German, M., Belamarich, P. F., & Oyeku, S. O. (2017). Associations between adverse childhood experiences and ADHD diagnosis and severity. *Academic Pediatrics*, 17(4), 349-355.

Center for Disease Control. (2020, April 24). *Adverse Childhood Experiences Resources*. https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/resources.html?CDC_AA_refVal=https%3A%2F%2F

Centers for Disease Control and Prevention (2000). Social support and health-related quality of life among older adults. *MMWR Morb Mortal Wkly Rep*. 54(17), 433-437.

Cheong, E. V., Sinnott, C., Dahly, D., & Kearney, P. M. (2017). Adverse childhood experiences (ACEs) and later-life depression: perceived social support as a potential protective factor. *BMJ Open*, 7, 1-11. <http://doi.org/bmjopen-2016-013228>

Chiu, C., Motl, R. W., & Ditchman, N. (2016). Validation of the social provisions scale in people with Multiple Sclerosis. *Rehabilitation Psychology*, 61(3), 297-307. <https://doi.org/10.1037/rep0000089>

Choi, K. R., Stewart, T., Fein, E., McCreary, M., Kenan, K. N., Davies, J. D., Zima, B. T.

- (2020). The impact of attachment-disrupting adverse childhood experiences on child behavioral health. *The Journal of Pediatrics*, 221, 224-229.
doi:10.1016/j.jpeds.2020.03.006
- Cohen, S., Janicki-Deverts, D., Turner, R. B., & Doyle, W. J. (2015). Does hugging provide stress-buffering social support? A study of susceptibility to upper respiratory infection and illness. *Association for Psychological Science*, 26(2), 135-147. <http://doi.org/10.1177/0956797614559284>
- Cooke, B., Rossmann, M., McCubbin, H., & Patterson, J. (1988). Examining the definition and assessment of social support: A resource for individuals and families. *Family Relations*, 37(2), 211-216. <http://doi.org/10.2307/584322>
- Corrales, T., Waterford, M., Goodwin-Smith, I., Wood, L., Yourell, T., & Ho, C. (2016). Childhood adversity, sense of belonging and psychosocial outcomes in emerging adulthood: A test of mediated pathways. *Children & Youth Services Review*, 63, 110–119. <https://doi-org.ezproxy.mtsu.edu/10.1016/j.childyouth.2016.02.021>
- Cutrona, C. E., & Russell, D. (1987). The provisions of social relationships and adaptation to stress. In W. H. Jones & D. Perlman (Eds.), *Advances in personal relationships* (pp. 37-68). Greenwich, CT: JAI Press.
- Davis, L., Barnes, A., Gross, A. C., Ryder, J. R., & Shlafer, R. J. (2019). Adverse childhood experiences and weight status among adolescents. *The Journal of Pediatrics*, 204, 71-76. <https://doi.org/10.1016/j.jpeds.2018.08.071>
- Degnan, A., Berry, K., Sweet, D., Abel, K., Crossley, N., & Edge, D. (2018). Social

networks and symptomatic and functional outcomes in schizophrenia: A systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology*, 53(9), 873-888. doi:10.1007/s00127-018-1552-8

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *The American Journal of Psychiatry*, 160(8), 1453-1460. <https://doi-org.ezproxy.mtsu.edu/10.1176/appi.ajp.160.8.1453>

Ezrokan, A. (2016). The link between types of attachment and childhood trauma. *Universal Journal of Educational Research*, 1071-1079. DOI: 10.13189/ujer.2016.040517

Esaki, N. & Larkin, H. (2013). Prevalence of adverse childhood experiences (ACEs) among service providers. *Families in Society*, 94(1), 31-37.

Exley, D., Norman, A., & Hyland, M. (2015). Adverse childhood experience and asthma onset: a systematic review. *European Respiratory Review*, 24, 299-305. <http://doi.org/10.1183/16000617.00004114>

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M.P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(1), 245-258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)

Finkelhor, D., Ormrod, R. & Turner, H. A. (2007). Poly-victimization: A neglected

component in child victimization. *Child Abuse & Neglect*, 31, 7-26.

<http://doi.org/10.1016/j.chiabu.2006.06.008>

Flores-Torres, M. H., Comerford, C., Signorello, L., Grodstein, F., Lopez-Ridaura, R., de Castro, F., Familiar, I., Ortiz-Panozo, E., & Lajous, M. (2020). Impact of adverse childhood experiences on cardiovascular disease risk factors in adulthood among Mexican women. *Child Abuse & Neglect*, 99, 1-10.

<http://doi.org/10.1016/j.chiabu.2019.104175>

Herrenkohl, T. I., Jung, H., Lika, J. B., Mason, W. A., Brown, E. C., Leeb, R. T., & Herrenkohl, R. C. (2016). Mediating and moderating effects of social support in the study of child abuse and adult physical and mental health. *American Journal of Orthopsychiatry*, 86(5), 573-583. <http://doi.org/10.1037/ort0000136>

Hughes, K., Bellis, M. A., Sethi, D., Andrew, R., Yon, Y., Wood, S., Ford, K., Baban, A., Boderseova, L., Kachaeva, M., Makaruk, K., Markovic, M., Povilaitis, R., Raleva, M., Terzic, N., Veleminsky, M., Wlodarczyk, J., & Zakhosha, V. (2019). Adverse childhood experiences, childhood relationships and associated substance use and mental health in young Europeans. *European Journal of Public Health*, 29(4),

741-747. <http://doi.org/doi:10.1093/eurpub/ckz037>

Jimenez, M. E., Wade, R., Schwartz-Soicher, O., Lin, Y., & Reichman, N. E. (2017). Adverse childhood experiences and ADHD diagnosis at age 9 years in a national urban sample. *Academic Pediatrics*, 17(4), 356-361.

Karaca, A., Yildirim, N., Cangur, S., Acikgoz, F., & Akkus, D. (2019). Relationship

between mental health of nursing students and coping, self-esteem, and social support. *Nurse Education Today*, 76, 44-50.

<https://doi.org/10.1016/j.nedt.2019.01.029>

Karatekin, C. & Ahluwalia, R. (2020). Effects of adverse childhood experiences, stress, and social support on the health of college students. *Journal of Interpersonal Violence*, 35(1-2), 150-172. <http://doi.org/10.1177/0886260516681880>

Lo Iacono, L., Catale, C., Martini, Al., Valzania, A., Viscomi, M. T., Chiurciu, V., Guatteo, E., Bussone, S., Perrone, F., Di Sabato, P., Arico, E., D'Argenio, A., Troisi, A., Mercuri, N.B., Maccarrone, M., Puglisi-Allegra, S., Casella, P., & Carola, V. (2018). From traumatic childhood to cocaine abuse: The critical function of the immune system. *Society of Biological Psychiatry*, 84, 905-916. <https://doi.org/10.1016/j.biopsych.2018.05.022>

Liotti, G. (2004). Trauma, dissociation, and disorganized attachment: Three strands of a single braid. *Psychotherapy: Theory, Research, Practice, Training*, 41(4), 472-486.

Lodhi, F. S., Montazeri, A., Nedjat, S., Mahmoodi, M., Farooq, U., Yaseri, M., Kasaeian, A., & Holakouie-Naieni, K. (2019). Assessing the quality of life among Pakistani general population and their associated factors by using the World Health Organization's quality of life instrument (WHOQOL-BREF): a population based cross-sectional study. *Health and Quality of Life Outcomes*, 17(9), 1-17.

Loudermilk, E., Loudermilk, K., Obenauer, J., & Quinn, M. (2018). Impact of adverse

- childhood experiences (ACEs) on adult alcohol consumption behaviors. *Child Abuse & Neglect*, 86, 368-374. <https://doi.org/10.1016/j.chiabu.2018.08.006>
- Malecki, C. & Elliott, S. (1999). Adolescents' ratings of perceived social support and its importance: Validation of the student social support scale. *Psychology in the Schools*, 36(6), 473-483. [https://doi.org/10.1002/\(SICI\)1520-6807\(199911\)36:6%3C473::AID-PI TS3%3E3.0.CO;2-0](https://doi.org/10.1002/(SICI)1520-6807(199911)36:6%3C473::AID-PI TS3%3E3.0.CO;2-0)
- Maris, S. The human being and socialization through culture. (2019). *County Center for Preservation and Promotion of Traditional Culture*, 72-73, 78-85.
- Maunder, R. G., Tannebaum, D. W., Permaul, J. A., Nutik, M., Haber, C., Mitri, M., Costantini, D., & Hunter, J. J. (2019). The prevalence and clinical correlates of adverse childhood experiences in a cross-sectional study of primary care patients with cardiometabolic disease or risk factors. *BMC Cardiovascular Disorders*, 19(304), 1-10. <https://doi.org/10.1186/s12872-019-01277-3>
- Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse & Neglect*, 69, 10-19. <https://doi.org/10.1016/j.chiabu.2017.03.016>
- Oexle, N. & Sheehan, L. (2020). Perceived social support and mental health after suicide loss. *Crisis*, 41(1), 65-69. <https://doi.org/10.1027/0227-5910/a000594>
- Park, Y. M., Shekhtman, T., & Kelsoe, J. R. (2020). Effect of the type and number of

adverse childhood experiences and the timing of the adverse experiences on clinical outcomes in individuals with bipolar disorder. *Brain Sciences*, 10(254), 1-11. <http://doi.org/10.3390/brainsci10050254>

Perera, H. N. (2016). Construct validity of the social provisions scale: A bifactor exploratory structural equation modeling approach. *Assessment*, Vol. 23(6), 720-733. <https://doi.org/10.1177/1073191115589344>

Sacks, V., Murphey, D., & Moore, K. (2014). Adverse childhood experiences: National and state-level prevalence. *Research Brief*, 28, 1-11.

Schofield, T. J., Lee, R. D., & Merrick, M. T. (2013). Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: A meta-analysis. *Journal of Adolescent Health*, 53, 532-538.
<http://dx.doi.org/10.1016/j.jadohealth.2013.05.004>

Sippel, L. M., Pietrzak, R. H., Charney, D. S., Mayes, L. C., & Southwick, S. M. (2015). How does social support enhance resilience in the trauma-exposed individual? *Ecology and Sociology*, 20(4): 10. <http://dx.doi.org/10.5751/ES-07832-200410>

Slopen, N., McLaughlin, K. A., Dunn, E. C., & Koenen, K. C. (2013). Childhood adversity and cell-mediated immunity in young adulthood: Does type and timing matter? *Brain, Behavior, and Immunity*, 28, 63-71.
<http://dx.doi.org/10.1016/j.bbi.2012.10.018>

Stein, R. E. K., Hurlburt, M. S., Heneghan, A. M., Zhang, J., Rolls-Reutz, J., Silver, E. J.,

- Fisher, E., Landsverk, J., & McCue Horwitz, S. (2013). Chronic conditions among children investigated by child welfare: A national sample. *Pediatrics*, *131*(3), 455-462. <https://doi.org/10.1542/peds.2012-1774>
- Sullivan, K., Rochani, H., Huang, L. T., Donley, D., & Zhang, J. (2019). Adverse childhood experiences affect sleep duration for up to 50 years later. *Sleep Research Society*, 1-9. <https://doi.org/10.1093/sleep/zsz087>
- Swanson, A., Geller, J., DeMartini, K., Fernandez, A., & Fehon, D. (2018). Active coping and perceived social support mediate the relationship between physical health and resilience in liver transplant candidates. *Journal of Clinical Psychology in Medical Settings*, *25*, 456-496. <https://doi.org/10.1007/s10880-018-9559-6>
- Tajvar, M., Grundy, E., & Fletcher, A. (2018). Social support and mental health status of older people: A population-based study in Iran-Tehran. *Aging & Mental Health*, *22*(3), 344-353. <http://dx.doi.org/10.1080/13607863.2016.1261800>
- Townley, G., Miller, H., & Kloos, B. (2013). A little goes a long way: The impact of distal social support on community integration and recovery of individuals with psychiatric disabilities. *American Journal of Community Psychology*, *52*(1/2), 84–96. <https://doi-org.ezproxy.mtsu.edu/10.1007/s10464-013-9578-2>
- Wan, Y., Chen, R., Ma, S., McFeeters, D., Sun, Y., Hao, J., & Tao, F. (2019). Associations of adverse childhood experiences and social support with self-injurious behavior and suicidality in adolescents. *The British Journal of Psychiatry*, *214*(3), 146-152. <https://doi.org/10.1192/bjp.2018.263>.
- Wang, J., Mann, F., Lloyd-Evans, B., Ma, R., & Johnson, S. (2018). Associations

between loneliness and perceived social support and outcomes of mental health problems: A systematic review. *BMC Psychiatry*, 18(156), 1-16.

<https://doi.org/10.1186/s12888-018-1736-5>

Weiss, R. (1974) The Provisions of Social Relationships. In: Rubin, Z., Ed., *Doing unto Others*, Prentice Hall, Englewood Cliffs, 17-26. World Health Organization.

(2020). *Adverse Childhood Experiences International Questionnaire (ACE-IQ)*.

https://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/en/

Wilson, K. (2020). *The relationship between adverse childhood experiences and executive functioning dimensions* (730501). [Master's thesis, Middle Tennessee State University]. JEWLScholar.

Windle, M., Ph.D., Haardörfer, R., Ph.D., Getachew, B., MPH, Shah, J., MPH, Payne, J., MPH, Pillai, D., MPH, & Berg, C., Ph.D., MBA. A multivariate analysis of adverse childhood experiences and health behaviors and outcomes among college students. (2018 Mar 5) doi: [10.1080/07448481.2018.1431892](https://doi.org/10.1080/07448481.2018.1431892)

Zhang, D., Yang, Y., Wu, M., Zhao, X., Sun, Y., Xie, H., Li, H., Li, Y., Wang, K., Zhang, J., Jia, J., & Su, Y. (2018). The moderating effect of social support on the relationship between physical health and suicidal thoughts among Chinese rural elderly: A nursing home sample. *International Journal of Mental Health Nursing*, 27, 1371-1382. <https://doi.org/10.1111/inm.12436>

APPENDIX A

Adverse Childhood Experience Questionnaire

Adverse Childhood Experience (ACE) Questionnaire Finding your ACE Score ra hbr 10 24 06

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household 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?
Yes No If yes enter 1 _____
2. Did a parent or other adult in the household often ...
Push, grab, slap, or throw something at you?
or
Ever hit you so hard that you had marks or were injured?
Yes No If yes enter 1 _____
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
Try to or actually have oral, anal, or vaginal sex with you?
Yes No If yes enter 1 _____
4. Did you 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?
Yes No If yes enter 1 _____
5. Did you 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?
Yes No If yes enter 1 _____
6. Were your parents ever separated or divorced?
Yes No If yes enter 1 _____
7. Was your mother or stepmother:
Often pushed, grabbed, slapped, or had something thrown at her?
or
Sometimes or 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?
Yes No If yes enter 1 _____
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
Yes No If yes enter 1 _____
9. Was a household member depressed or mentally ill or did a household member attempt suicide?
Yes No If yes enter 1 _____
10. Did a household member go to prison?
Yes No If yes enter 1 _____

Now add up your "Yes" answers: _____ This is your ACE Score

APPENDIX B

SOCIAL PROVISIONS SCALE QUESTIONNAIRE

The Social Provisions Scale

Instructions

In answering the next set of questions I am going to ask you, I want you to think about your current relationship with friends, family members, coworkers, community members, and so on. Please tell me to what extent you agree that each statement describes your current relationships with other people. Use the following scale to give me your opinion. (Hand a response card.) So, for example, if you feel a statement is very true of your current relationships, you would tell me "strongly agree". If you feel a statement clearly does not describe your relationships, you would respond "strongly disagree". Do you have any questions?

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

1. There are people I can depend on to help me if I really need it. _____
2. I feel that I do not have close personal relationships with other people. _____
3. There is no one I can turn to for guidance in times of stress. _____
4. There are people who depend on me for help. _____
5. There are people who enjoy the same social activities I do. _____
6. Other people do not view me as competent. _____
7. I feel personally responsible for the well-being of another person. _____
8. I feel part of a group of people who share my attitudes and beliefs. _____
9. I do not think other people respect my skills and abilities. _____
10. If something went wrong, no one would come to my assistance. _____
11. I have close relationships that provide me with a sense of emotional security and well-being. _____
12. There is someone I could talk to about important decisions in my life. _____
13. I have relationships where my competence and skills are recognized. _____
14. There is no one who shares my interests and concerns. _____
15. There is no one who really relies on me for their well-being. _____
16. There is a trustworthy person I could turn to for advice if I were having problems. _____

17. I feel a strong emotional bond with at least one other person. _____
18. There is no one I can depend on for aid if I really need it. _____
19. There is no one I feel comfortable talking about problems with. _____
20. There are people who admire my talents and abilities. _____
21. I lack a feeling of intimacy with another person. _____
22. There is no one who likes to do the things I do. _____
23. There are people I can count on in an emergency. _____
24. No one needs me to care for them. _____

APPENDIX C

IRB APPROVAL

IRB
INSTITUTIONAL REVIEW BOARD
 Office of Research Compliance,
 010A Sam Ingram Building,
 2269 Middle Tennessee Blvd
 Murfreesboro, TN 37129

**MIDDLE
 TENNESSEE**
 STATE UNIVERSITY

IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Wednesday, April 06, 2016

Investigator(s): Seth Marshall
 Investigator(s) Email(s): seth_marshall@mtsu.edu
 Department: Psychology

Study Title: *Relationships between adverse childhood experiences, executive functioning, social systems, and physical health in college students*
 Protocol ID: #16-2238

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 (4) *Collection of data through noninvasive procedures*. 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	4/6/2017	
Participant Size	400	
Participant Pool	Click here to enter text.	
Exceptions	Click here to enter text.	
Restrictions	Click here to enter text.	
Comments	Click here to enter text.	
Amendments	Date	Post-approval Amendments
		Click here to enter text.

This protocol can be continued for up to THREE years (4/6/2019) by obtaining a continuation approval prior to 4/6/2017. 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	4/6/2017	Click here to enter text.
Second year report	4/6/2018	Click here to enter text.
Final report	4/6/2019	Click here to enter text.

IRBN001

Version 1.3

Revision Date 03.06.2016