



SCHOOL of
GRADUATE STUDIES
EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University
Digital Commons @ East Tennessee
State University

Electronic Theses and Dissertations

Student Works

12-2019

We All Need Somebody to Lean on: Social Support as a Protective Factor for Individuals with Childhood Adversity

Rachel Clingensmith
East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/etd>



Part of the [Developmental Psychology Commons](#), [Health Psychology Commons](#), and the [Social Psychology Commons](#)

Recommended Citation

Clingensmith, Rachel, "We All Need Somebody to Lean on: Social Support as a Protective Factor for Individuals with Childhood Adversity" (2019). *Electronic Theses and Dissertations*. Paper 3655.
<https://dc.etsu.edu/etd/3655>

This Thesis - unrestricted is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

We All Need Somebody to Lean on:
Social Support as a Protective Factor for Individuals with Childhood Adversity

A thesis
presented to
the faculty of the Department of Psychology
East Tennessee State University

In partial fulfillment
of requirement for the degree
Master of Arts in Psychology

by
Rachel M. Clingensmith
December 2019

Diana Morelen, Ph.D., Chair
Stacey Williams, Ph.D.
Julia Dodd, Ph.D.

Keywords: Social Support, Childhood Adversity, Emotion Regulation, Depression

ABSTRACT

We All Need Somebody to Lean on:

Social Support as a Protective Factor for Individuals with Childhood Adversity

by

Rachel M. Clingensmith

Extensive research has shown that childhood adversity impacts development across the lifespan and has been linked to numerous negative health outcomes. Depression symptoms are one such outcome that has been associated with ACE exposure. The literature also indicates emotion regulation may be a mediator between ACEs and depression outcomes. The primary aim of this study (N = 766) is to investigate pathways leading from ACEs to depression and potential protective factors. It was hypothesized that difficulties in emotion regulation would mediate the link between ACEs and later depressive symptoms, social support would moderate the pathway between difficulties in emotion regulation and depression, and social support would have a greater buffering effect in individuals with more severe ACE exposure. Results supported emotion regulation as a mediator between ACEs and depression. Social support was not found to significantly buffer against depression. Future research may benefit from examining transdiagnostic emotion regulation treatments.

ACKNOWLEDGMENTS

To my advisor Dr. Diana Morelen, thank you for walking beside me as I climbed this mountain. Your feedback, creation of deadlines, and emotional support pushed me to keep putting one foot in front of the other through countless revisions and drafts. I am grateful for your mentorship as I navigate through my graduate training, and I look forward to having you in my corner throughout my professional career. I am also appreciative of all the feedback and time my other committee members dedicated to this project. Your expertise and statistical knowledge were invaluable throughout this process.

To my fellow PhD cohort, thank you for your empathy, understanding, and acting as my sounding board as I approached each new step in this process. I will continue to do the same for you, as we all need somebody to lean on.

Thank you to my partner for being a steadfast rock and reminding me I have permission to take a break. You are my biggest cheerleader and confidant.

And finally, thank you to my cat for her continued, yet unsolicited, contribution to this project. I hope your paws continue to bat at the keys on my computer through many more projects and years to come.

TABLE OF CONTENTS

	Page
ABSTRACT.....	2
ACKNOWLEDGEMENTS.....	3
LIST OF TABLES.....	5
LIST OF FIGURES.....	6
Chapter	
1. INTRODUCTION.....	7
Aces and Emotion Regulation.....	11
Emotion Regulation as a Mechanism of Risk Transmission.....	11
Social Support as a Construct.....	14
Social Support as a Protective Factor.....	16
Social Support and Depression.....	18
Present Study and Hypotheses.....	21
2. METHODS.....	23
Participants.....	23
Procedure.....	23
Measures.....	24
Statistical Analyses.....	26
3. RESULTS.....	28
4. DISCUSSION.....	31
REFERENCES.....	38
APPENDIX.....	52

LIST OF TABLES

Table	Page
1. Sample Demographics.....	24
2. Bivariate Correlations and Descriptive Statistics.....	30
3. Bootstrapped Mediation and Moderated Mediation Analyses.....	31

LIST OF FIGURES

Figure	Page
1. Simple Mediation Model.....	32
2. Moderated Mediation Model.....	33
3. Simple Moderation Model.....	34

CHAPTER 1

INTRODUCTION

Internalizing disorders, such as depression, are among the most common mental health difficulties adults face worldwide (Ferrari et al., 2013; Waraich, Goldner, Somers, & Hsu, 2004). Though estimates vary slightly, the global point prevalence rate for depression is relatively high at approximately 5% (Ferrari et al., 2013). Further, it is extremely common for depression to be comorbid with several other disorders such as anxiety disorders, substance use disorders, nicotine dependency, post-traumatic stress disorder, and personality disorders (Angelakis & Nixon, 2015; Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Hirschfeld, 2001). Children who have experienced trauma or adversity represent a vulnerable population with a heightened risk for health vulnerabilities and the development of internalizing disorders (Felitti et al., 1998; Freeman, 2014). One factor that may contribute to the development and maintenance of depression is difficulties in emotion regulation, as difficulty in managing internal emotion states is a key component of mood disorders (Sloan et al., 2017). Moreover, there has been much research supporting emotion regulation as a mediator between childhood trauma and internalizing symptoms (Glaser, van Os, Portegijs, & Myin-Germeys, 2006; Poole, Dobson, & Pusch, 2017; Robinson et al., 2009; Shipman, Zeman, Penza, & Champion, 2000). More research is needed examining environmental supports that may serve as protective factors surrounding the mechanistic pathway from emotion regulation difficulties to depressive symptomology. Within the current study, we will attempt to validate this mediation model within our own sample. We will also explore social support as a potential moderator of the pathway between emotion regulation and depression, pulling from Cohen and Will's (1985) buffer theory of social support.

Childhood adversities and traumas can alter developmental pathways and heighten risk for negative outcomes across the lifespan (Baglivio, Wolff, Piquero, & Epps, 2015; Balistreri & Alvira-Hammond, 2016; Beitchman, Zucker, Hood, DaCosta, & Akman, 1991; Felitti et al., 1998; Mersky, Topitzes, & Reynolds, 2013). One way to examine childhood trauma is through the lens of Adverse Childhood Experiences (ACEs). ACEs are defined as any exposure occurring under the age of eighteen to emotional, physical, or sexual abuse, neglect, and household dysfunction (i.e., exposure to interpersonal violence, caregiver incarceration, caregiver mental illness/suicide). According to the Centers for Disease Control and Prevention (2016) approximately 36.1% of the population endorse zero ACEs, 26.1% endorse one ACE, and 12.5% endorse four or more ACEs. This means that over half of the population has suffered some form of adverse life experience in their childhood; further, this number may be an underestimate of the true ACEs prevalence, as the sensitive nature of the questions may cause individuals to refrain from reporting the experience of adverse life events. Given that most individuals will be affected by one or more ACEs in their childhood, and that ACEs have been found to have a dose-response relationship with negative health outcomes (Glaser et al., 2006; Mersky et al., 2013; Poole et al., 2017), it is important to better understand ACEs, their outcomes, their mechanisms, and factors that may promote risk or resilience in the face of past ACEs.

While the research literature has long considered the impact of early adversity on later outcomes (Beitchman et al., 1991; Egeland, Sroufe, & Erickson, 1983; Terr, 1985) it wasn't until the late 1990's that the term ACEs became widely known across both science and practice. This coined term, ACEs, became popular as a result of a study conducted by Felitti and colleagues (1998) that recruited participants from the Kaiser Permanente's San Diego Health Appraisal Clinic. Participants (n = 9508) in the Kaiser study were sent surveys that asked questions

regarding seven areas of potential adverse experiences: experiencing psychological abuse, physical abuse, and/or sexual abuse; witnessing violence against mother; and/or residing in a home with a person with substance abuse problems, a person with mental illness, or a person whom had been incarcerated (Felitti et al., 1998). Over half of participants (52%) endorsed the presence of one or more ACE in their lifetime, and approximately 6.2% of participants stated they had experienced four or more ACEs within their childhood. When examining the outcomes of these participants, it became apparent that ACEs had a strong positive relationship with psychological outcomes as well as physical health risk factors. As the number of ACEs a participant endorsed increased, so did their risk for the development of psychological disorders (e.g., anxiety, depression), and medical problems (e.g., diabetes, cardiovascular disease) later in life. One proposed explanation of the association between ACEs and physical and mental health outcomes is that stressful life experiences may impact neurodevelopment which may, in turn, have a negative impact on one's psychological and socioemotional development (Centers for Disease Control and Prevention, 2017). This has been referred to as the "cascading effect" of ACEs (Layne et al., 2014). These compounding factors may lead to the adoption of risky health behaviors such as overeating, smoking, or drug use, eventually leading to a shortened lifespan.

While research on childhood trauma has been conducted for decades, the vast reach of the ACE study sparked a new framework and language to examine the effects of childhood trauma. Although both abuse and neglect are items specified within the ACEs questionnaire, literature examining the effects of childhood trauma far predates the ACEs term, (Egeland et al., 1983; Felitti et al., 1998; Terr, 1985). The current study is focused on the broad impact of cumulative toxic stress on developmental pathways, rather than specific ACE items. Thus, in order to adequately evaluate the literature we have reviewed studies using relevant terms such as

“childhood abuse” or “maltreatment,” as well as research specifically relating to the ACEs questionnaire (Barch, Belden, Tillman, Whalen, & Luby, 2018; Choi & Oh, 2014; Danese & McEwen, 2012; Egeland et al., 1983; Mersky et al., 2013; Terr, 1985). For the sake of clarity and specificity, we will refer to the focal construct in each reviewed article, using the term utilized in the original study.

ACEs and Emotion Regulation

Emotion regulation is one developmental domain that has been shown to be affected by the experience of ACEs (Glaser et al., 2006; Hébert, Langevin, & Oussaïd, 2018; Huh, Kim, Lee, & Chae, 2017; Poole et al., 2017; Shipman et al., 2000; Soenke, Hahn, Tull, & Gratz, 2010). Emotion regulation is an individual’s ability to monitor and modulate both internal affective states, physiological arousal, and behavior resulting from emotion related stimuli (Eisenberg & Spinrad, 2004). For example, consider a school age child whose feelings were recently hurt by another child at recess. If this girl has adaptive emotion regulation skills, she may feel sad and get upset but then engage in active regulation and tell herself the other child’s opinion doesn’t matter, she may seek another friend to comfort her, or she may simply take deep breaths and put the event behind her. These are all strategies which are socially acceptable, and overall lead to better outcomes (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Eisenberg, Eggum, & Di Giunta, 2010; Eisenberg & Spinrad, 2004). Conversely, a child with less adaptive emotion regulation skills may ruminate on the event, disengage from peers, or even become aggressive with others. Some positive developmental outcomes related to adaptive emotion regulation include higher levels of emotional intelligence, social competence, and empathy (Blair et al., 2015; Christopher, Saunders, Jacobvitz, Burton, & Hazen, 2013; Eisenberg, Wentzel, & Harris, 1998). On the other hand, emotion dysregulation is associated with higher rates of both internalizing and

externalizing symptoms (Choi & Oh, 2014). Early childhood is critical time period in which neural connections are formed and broken, setting the foundation for development throughout one's lifetime (Britto & Pérez-Escamilla, 2013). As such, adverse experiences in youth may stunt the development of the emotion regulation system (Dunn, Nishimi, Gomez, Powers, & Bradley, 2018; Glaser et al., 2006), resulting in poorer overall outcomes.

Emotion Regulation as Mechanism of Risk Transmission

As outlined briefly above, one avenue through which ACEs may result in later pathological outcomes is through the pathway of emotion regulation. Within the literature, there is strong support for emotion regulation as a mechanism of risk transmission from ACEs to pathology in later life. This has been examined in both child (Hébert et al., 2018; Robinson et al., 2009; Shipman et al., 2000) and adult samples (Glaser et al., 2006; Hopfinger, Berking, Bockting, & Ebert, 2016).

Several studies have examined emotion regulation as a mechanism of risk transmission between ACEs and negative mental health outcomes using child samples. One study conducted in Canada with survivors of sexual abuse (children ages 6-12 years) found that emotion regulation mediated the relationship between childhood sexual trauma and both internalizing and externalizing problems (Hébert et al., 2018). One study conducted in the United States (U.S.) with girls ages 6-12 found that those who had endured sexual abuse endorsed less emotional understanding and more emotional dysregulation than peers who had not been sexually abused (Shipman et al., 2000). Emotion regulation difficulties were positively associated with emotional lability, negative affect, and emotional rigidity. Further, participants who were sexually abused were more likely to expect negative reactions from both family members and peers in response to negative emotional displays such as sadness or anger. Regarding younger children, one study

in the U.S. with preschool age children (1-3 years) found that children who had been maltreated exhibited more emotion dysregulation than those children who had not been maltreated (Robinson et al., 2009). Consistent with the studies with older youth (i.e., Herbert et al., 2018; Shipman et al., 2000), this study also found that emotion dysregulation was linked to higher internalizing symptoms (Robinson et al., 2009). Combined, these studies reflect the significant impact that ACEs can have on emotion regulation development in children.

Research with adult samples also lends support to emotion regulation's role in the link between ACEs and internalizing symptomology. A study conducted in Korea with patients within a psychiatric hospital found emotion dysregulation to partially mediate the relationship between childhood trauma and depression (Huh et al., 2017). Another study conducted in the U.S. with a large sample of women found difficulties in emotion regulation to fully mediate the relationship between past trauma and depressive symptoms (Cloitre et al., 2018). A study conducted in the U.S. within a clinical sample of individuals with a MDD diagnosis also found emotion regulation skills to be a mediator in the pathway between childhood adversity and future MDD diagnosis (Hopfinger et al., 2016). Another study conducted in a medical setting in the U.S. with adult patients found that those who had endured negative life experiences in childhood had greater levels of emotion dysregulation which was found to be related to increased reactivity to common daily stressors causing further dysfunction within these individual's daily lives (Glaser et al., 2006). Combined, these studies suggest that emotion regulation is likely one mechanism through which early adversity could lead to later internalizing problems.

The literature reviewed thus far establishes ACEs' role in emotion regulation development based on subjective (i.e., self-report) methods of assessing emotion regulation. There is also support for ACEs role in emotion regulation development at an observable

biological level (Danese & McEwen, 2012; Dedovic, Duchesne, Andrews, Engert, & Pruessner, 2009; Sheridan & McLaughlin, 2014). Neurobiological models have been posited to help explain the link between ACEs, emotion regulation, and mental health outcomes. The presence of ACEs in childhood composes a context of deprivation and threat for the developing child and has cascading consequences upon neural development (Sheridan & McLaughlin, 2014). Specifically, ACEs have been shown to be related to smaller volumes in prefrontal cortex and hippocampus regions of the brain regions which play a crucial roles in emotion regulation, impulse control, and executive functioning (Danese & McEwen, 2012; Klimes-Dougan & Garber, 2016). ACEs are also predictive of irregular patterns of inferior frontal gyrus connectivity, with these disruptions in connectivity being related to externalizing symptoms (Barch et al., 2018). The hypothalamic pituitary adrenal (HPA) axis is also believed to be heavily impacted by early stressful life experiences (Danese & McEwen, 2012; Dedovic et al., 2009; Sheridan & McLaughlin, 2014). The HPA axis is a combination of both nervous and endocrine systems which interact in order to form the central stress response system (Danese & McEwen, 2012; Dedovic et al., 2009). This central stress response system is responsible for producing cortisol, a stress hormone, which is commonly found at significantly elevated levels in children who have experienced stressful life events suggesting an overactivation of the HPA system (Danese & McEwen, 2012). Further, depressive symptoms have been associated with disruptions in the HPA system and cortisol regulation (Keller et al., 2017).

Combined, research using subjective and objective methods of assessment have offered theoretical support for emotion regulation as a mechanism of risk transmission between ACEs and future symptomology (Glaser et al., 2006; Hébert et al., 2018; Hopfinger et al., 2016; Poole et al., 2017; Robinson et al., 2009; Shipman et al., 2000; Soenke et al., 2010), though only a

handful of studies have validated this mediation model empirically. While it is important to understand how maladaptive early experiences (ACEs) can lead to disordered pathways (disrupted emotion regulation) and heightened risk for psychopathology (internalizing problems), it is also essential to better understand environmental factors that may promote resilience in the face of past adversity (Masten, 2007). Some environmental influences which may be protective against the development of internalizing difficulties are intimate, close relationships and social support stemming from such relationships (Alloway & Bebbington, 1987; Cohen & Wills, 1985; Pierce, Sarason, & Sarason, 1991).

Social Support as a Construct

Much of the research on social support began emerging in the early 80's (Barrera & Ainlay, 1983; Bowers & Gesten, 1986; Broadhead et al., 1983; Krause, 1987). Since then, there has been much debate surrounding the validity of research on social support, likely due to the inconsistency of the construct's definition as well as a lack of valid and reliable measures (Barrera & Ainlay, 1983; Mutran, Reed, & Sudba, 2001; Pierce et al., 1991; Sarason & Sarason, 2009). At a broad level, social support can be understood as either general or relationship-specific (Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Mutran et al., 2001; Pierce et al., 1991; Sarason & Sarason, 2009). Both general and relationship-specific social support can be thought of in terms of behavioral transactions between individuals (Barrera & Ainlay, 1983). While general social support and relationship-specific social support both encompass this concept, one way to distinguish between the two is that general social support is indicative of a more macro level concept, whereas relationship-specific social support zooms in to examine specific types of relationships, such as friendship, family, or relationships with significant others.

Thus, it is important to review the varying definitions of social support, and to clarify the definition that we take in the current study.

General social support refers to the broad network of people with whom individuals surround themselves. This structural network includes the identity of group members, size of the group, and group homogeneity, as well as frequency of contact the individual has with the social network (Mutran et al., 2001; Sarason & Sarason, 2009). The Social Support Questionnaire is a measure which is suggested to hone in on the concept of general social support, rather than relationship-specific social support (Pierce et al., 1991; Sarason & Sarason, 2009). Within the measure, individuals are asked to respond to questions such as “whom can you really count on to listen to you when you need to talk?” (Sarason & Sarason, 2009). Respondents then answer with the number of individuals they could count on (N) and rate their satisfaction (S) with this number on a Likert scale. Final scores are calculated by adding both N and S scores together and dividing by 27 (the number of items on the measure). Hence, while quality or satisfaction of these relationships are taken into consideration, scores partially hinge upon size of the social network.

Conversely, measures such as the Multidimensional Scale of Perceived Social Support (MSPSS) focus on subjective ratings of certain types of relationships (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS asks respondents to rate how strongly they agree or disagree with statements such as “I have friends with whom I can share my joys and sorrows” or “I can talk about my problems with my family.” This scoring system allows researchers to evaluate the quality of specific segments (friends, family, and significant others) of participant’s support system based upon participant’s perceptions of these relationships. Objective measurements are generally lauded as the hallmark of measurement precision and while it may seem desirable to have an objective measure of social support, such the number of one’s close relationships, it is

generally accepted subjective measures of social support paint more accurate depictions of social support quality, and measures assessing close personal ties are most often utilized in the literature (Pierce et al., 1991; Sarason & Sarason, 2009; Zimet et al., 1988).

General social support and relationship-specific social support overlap in the sense that they both capture pools of people who could provide relational resources; however, they are unique constructs and differ in the level (macro or micro) at which they operate, with relationship-specific support focusing on intimate circles of relationships (micro). For example, an individual can have little faith in the support of their broad social network yet have no doubt specific people, such as friends or family, would be available in times of need (Pierce et al., 1991). It follows then that one's general concept of social support may be more internalized and overarching, reflecting more engrained schemas about relationships; whereas perceptions of relationship-specific social support may vary on a case to case basis. For the purpose of this study, we will be taking a relationship-specific approach to social support examining perceived support from three relational domains: family, friends, and significant others. We chose to examine relationship-specific support as perceptions of specific relationships may be a more accurate measurement approach and it allows us to look at the quality of support from different social sources (Pierce et al., 1991; Zimet et al., 1988).

Social Support as a Protective Factor

Social support itself has been associated with numerous positive outcomes such as lowered morbidity and mortality rates, recovery from illness, less emotional distress, lower levels of stress, and positive health outcomes for patients with specific illness such as coronary heart disease and diabetes (Ford, Tilley, & McDonald, 1998; Kähkönen, Kankkunen, Miettinen, Lamidi, & Saaranen, 2017; Krause, 1987; Mutran et al., 2001; Reblin & Uchino, 2008; Russell

& Cutrona, 1991). Further, social support has also been proposed to be a potential buffer against the development of psychopathology (Alloway & Bebbington, 1987; Cohen & Wills, 1985). However, the research examining social support as a protective factor against the development of psychopathology is just as vast and varying as that surrounding the construct's definition. This is likely due to the complexity of social support, methodological and study design errors, inconsistency of definition, and the limitations of retrospective self-report studies (Alloway & Bebbington, 1987).

Researchers have often taken different approaches to the concept of buffering (Alloway & Bebbington, 1987). An additive approach examines the way reduced or absent social support adds to preexisting vulnerabilities whereas the multiplicative approach is used to analyze social support as a factor which can act independently of and/or synergistically with preexisting vulnerabilities. A third approach, first employed by Brown and Harris in 1978 utilizes a restricted concept of buffering which assumes the positive effects of social support will not be found without the presence of adversity (as cited in Alloway & Bebbington, 1987). The buffer theory of social support is coherent with this ideology, suggesting that repeated stressful life events place strain on the individual, depleting their internal resources (Cohen & Wills, 1985). However, Cohen and Will's path model hypothesizes that when adverse experience occur or there is the potential for an adverse experience to occur, this initiates a stress appraisal process. Once an individual categorizes an event as being stressful this, in turn, spurs emotional, physiological, or behavioral stress responses. Dysfunctional stress responses may then lead to the development of mental illness. Social support is suggested to indirectly buffer against the development of psychopathology through its effect on the appraisal and stress responses pathways. Social support may then act as a buffer against the development of psychopathology

by functioning as an external resource when internal resources become low due to cumulative toxic stress.

Social Support and Depression

There is some research to suggest that social support may act as a buffer against risk for depressive symptomology. Regarding research in early childhood, one longitudinal birth cohort examining mother-child dyads in the U.S. looked at the role of parenting stress, suboptimal parenting practices, and social support in early childhood on later development of internalizing and externalizing symptoms (Heberle, Krill, Briggs-Gowan, & Carter, 2015). Data for social support was collected via maternal report when the children were at 2 and 3 years of age and mental health outcomes were collected when the children reached kindergarten. Results showed perceived maternal social support buffered the relationship between suboptimal parenting behavior and child depressive/withdrawn symptoms. A study conducted in the U.S. with adolescent girls investigated the role of peer and parental support as a protective factor against stressful life events on suicidal symptoms (Mackin, Perlman, Davila, Kotov, & Klein, 2017). The data suggested parental support and peer support both had a buffering effect on suicidality; however, the effect of parental support was much stronger than that of peer support. Together, these studies on social support in youth indicate that social support is relevant across the developmental trajectory (and is important for caregivers as well as youth) in mitigating maladaptive outcomes.

Several studies have examined social support as a protective factor with adult samples. One study conducted across four large U.S. universities with first year college-students who were past victims of bullying looked at the role of social support as a protective factor against depressive symptoms (Reid, Holt, Bowman, Espelage, & Green, 2016). Data on past bullying,

current social support, and current depression symptoms were collected in the fall semester and symptomology was assessed again in the spring semester. Results indicated that while social support had a significant negative relationship with depressive symptoms regardless of the presence of past victimization, researchers did not find evidence suggesting social support moderated the relationship between bullying and depression. A study in Portugal with adult female participants examined depression in those who had experienced intimate partner violence (Costa & Gomes, 2018). Social support and self-esteem were examined as potential buffers and were both found to moderate the relationship between abuse and depression symptoms. Another study conducted with university students from China found social support to moderate the relationship between stress and depressive symptoms (Wang, Cai, Qian, & Peng, 2014). Nonetheless, while high social support was found to be a significant protective factor, it is important to note that stress appeared to have greater impact on depressive symptoms in the low social support group than the high social support group. Conversely, another study in a sample of undergraduate athletes in the U.S. examined social support as a potential moderator between stress and help-seeking, help-seeking attitudes, and depression (Norseth, 2017). Social support was not found to moderate these three relationships; however, higher levels of stress and depression were also related to lower levels of help seeking which may indicate participants did not utilize social support systems in times of stress. Thus, there appears to be mixed findings in adults regarding the role of social support as a buffer against depression symptoms.

There is little research examining social support as a potential buffer between emotion regulation and depressive symptoms. However, considering the research linking adversity in childhood to emotion dysregulation (Glaser et al., 2006; Hébert et al., 2018; Huh et al., 2017; Poole et al., 2017; Shipman et al., 2000; Soenke et al., 2010) and emotion dysregulation's

contribution to the development of later pathology (Glaser et al., 2006; Heberle et al., 2015; Poole et al., 2017; Robinson et al., 2009), it may be an appropriate link to explore. This is also congruent with the buffer theory of social support, as those who have experienced stressful life events may be more responsive to social support as a buffer against negative outcomes (Cohen & Wills, 1985).

A review on the literature surrounding social support, emotion regulation, and depression suggests the effects of social support on depressive symptoms may be a result of interpersonal regulation, a resource which is called upon when internal regulation capabilities are low (Marroquín, 2011). Social support may then be relevant to the link between emotion regulation and depression symptoms because social support itself may act as an external source of emotion regulation (Marroquín, 2011). Interpersonal regulation can be both an extrinsic process through which individuals either consciously try to manipulate other's emotions, or an intrinsic process where an individual deliberately seeks out another in order to regulate themselves (Zaki & Williams, 2013). However, social features of relationships such as connectedness, trust, and intimacy are examples of some features of social support that may inadvertently buffer the relationship between emotion regulation and depression symptoms (Marroquín & Nolen-Hoeksema, 2015). Meaning that, social support in and of itself may function as a supplemental emotion regulation strategy. While individuals vary in their tendency to seek out interpersonal emotion regulation and in perceptions of its efficacy, one study indicated when perceived social support was high, individuals were more likely to utilize and benefit from interpersonal emotion regulation (Williams, Morelli, Ong, & Zaki, 2018).

Present Study and Hypotheses

ACEs have been linked to heightened risk across physical and mental health domains (Danese & McEwen, 2012; Dedovic et al., 2009; Felitti et al., 1998). One such outcome which has been related to childhood adversity is depression, which is one of the most common mental health difficulties world-wide (Ferrari et al., 2013; Waraich et al., 2004). Difficulties in emotion regulation have also been associated with ACE exposure; further, several studies have identified emotion regulation as a potential mechanism through which ACEs impact later development of depressive symptoms (Cloitre et al., 2018; Glaser et al., 2006; Hébert et al., 2018; Hopfinger et al., 2016). While it is important to understand how adversity impacts individuals across the lifespan, more research examining protective factors which could buffer against the negative effects of adversity is needed. Considering this gap in the literature, the primary aim of this study is to investigate the role of social support as a protective factor against depression in those who have experienced ACEs nested within the model where emotion regulation acts as a mediator between ACE exposure and later depressive symptoms. Study hypotheses are as follows:

Hypothesis 1.

- a. Adverse childhood experiences are hypothesized to be positively related to difficulties in emotion regulation.
- b. Adverse childhood experiences are hypothesized to be positively related to depression later in life.
- c. Adverse childhood experiences are hypothesized to be negatively related to perceived social support.

Hypothesis 2. It is hypothesized that the relationship between ACEs and depression will be mediated by emotion regulation (see Figure 1).

Hypothesis 3. Within the mediation model where emotion regulation mediates the relationship between ACEs and depressive symptoms, a moderated mediation model is proposed where social support will act as a protective factor on the pathway from emotion regulation to depressive symptoms (see Figure 2).

Hypothesis 4. The moderating effect of social support on the link between emotion regulation difficulties and depression symptoms will be greater for individuals with greater ACE exposures compared to individuals who have lower or no ACE exposures. Given that the buffer theory of social support suggests social support may be particularly salient for individuals who have undergone stressful life events, those who have experienced ACEs may benefit more from social support. Conversely, social support may not be a significant protective factor against depressive symptoms in those who have not experienced ACEs. Thus, in the current study we will conduct exploratory analyses to investigate social support as potential moderator between emotion dysregulation and depressive symptoms in groups with higher and lower ACE scores.

CHAPTER 2

METHODS

Participants

The sample for this proposed project comes from a larger existing dataset that is no longer in active data collection as part of the broader Religion, Emotions, and Current Health (REACH) study. Our sample consisted of undergraduate and graduate students from East Tennessee State University (N = 766). While the majority of participants were undergraduates (98.8%), five participants indicated they were studying at the graduate level (.9%). Of the undergraduate sample pool, 52.5% indicated they were in the freshman year. Participant ages ranged from 18-55 (M = 20.43, SD = 4.51). The sample was 70.9% (n = 543) female, 28.1% (n = 215) male, and 1.2% (n = 8) people who identified as gender-nonconforming (including those who identified as transgender and genderqueer). Of responding participants 86.2% (n = 655) identified as heterosexual, 2.0% (n = 15) identified as gay, 2.1% (n = 16) identified as lesbian, 5.1% (n = 39) identified as bisexual, 2.1% (n = 16) identified as pansexual, .8% (n = 6) identified as asexual, and 1.8% (n = 13) identified as either “other” or indicated they were questioning their sexual orientation. The sample was 80.1% white (n = 616), 10.7% black (n = 82), 3.4% Latino or Hispanic (n = 26), 3.0% Asian or Pacific Islander (n = 23), and 7.1% identifying as another ethnicity (n = 47). See Table 1.

Table 1.
Sample Demographics

	<i>N</i>	<i>Min.</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Age	766	18	55	20.43	4.51
	<i>N</i>		<i>%</i>	<i>Cum. %</i>	
Gender					
Male	215		28.1	28.1	
Female	543		70.9	99.0	
Nonconforming	8		1.0	100.0	
Sex. Orientation					
Heterosexual	655		86.2	86.2	
Gay	15		2.0	88.2	
Lesbian	16		2.1	90.3	
Bisexual	39		5.1	95.4	
Pansexual	16		2.1	97.5	
Asexual	6		0.8	98.3	
Other	13		1.8	100.0	
Ethnicity					
White	616		80.1	80.1	
Black	82		10.7	90.8	
Latino/Hispanic	26		3.4	94.2	
Asian/Pacific					
Is.	23		3.0	97.2	
Other	47		7.1	104.3	

Note: *Min.* and *Max.* indicate age range of the sample. *M* and *SD* are used to indicate mean and standard deviation respectively. Of note, participants were allowed to indicate they identified with more than one ethnicity which is why cumulative percent exceeds 100% on the ethnicity demographic variable.

Procedure

Participants were college students attending a mid-sized public university in the southeast who were recruited via an online platform (SONA). The SONA system enables university researchers to conduct research studies pulling from a student participant pool who sign up for research credits as part of class assignments and/or extra credit. All participation is voluntary, and students had the option to choose from a range of studies on the SONA system. If students chose to participate in this study, they were routed to another online survey platform REDCap

(Harris et al., 2009) that allowed them to answer survey questions anonymously. Informed consent was administered electronically before study participation and this study has institutional IRB approval. Questionnaires took approximately 90 minutes to complete.

Measures

Adverse Childhood Experiences (ACE) Questionnaire

The Adverse Childhood Experiences (ACE) questionnaire (Felitti et al., 1998) was used to assess adversity in childhood. The questionnaire is composed of 10 items and assesses three areas of abuse. It asks questions pertaining to one's exposure to both physical and psychological abuse, neglect, and abuse related to growing up in a dysfunctional household. An affirmative response to an item is equivalent to 1 point, with a total of 10 possible points. Individual's scoring > 4 ACEs are considered higher risk than those scoring < 3 . The questionnaire has demonstrated good internal consistency ($\alpha = .88$; Murphy et al., 2014). Within our own study the measure also demonstrated good internal consistency ($\alpha = .81$).

Difficulties in Emotion Regulation Scale (DERS)

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to assess participant's current emotion dysregulation. The brief measure is composed of 36 items and covers six subscales: nonacceptance of emotion responses, difficulties in engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity (Gratz & Roemer, 2004). The measure has high internal consistency ($\alpha = .93$), with each subscale also demonstrating adequate internal consistency with a Cronbach's alpha of $>.80$. Within our own study the measure also demonstrated good internal consistency ($\alpha = .96$). The scale has good convergent validity with the Generalized Expectancy for Negative Mood Regulation Scale and predictive validity, with

scores being correlated significantly in the expected direction with intimate partner violence and self-harm behaviors (Gratz & Roemer, 2004). In the original validation, correlation coefficients show the DERS has good test-retest reliability ($\rho_I = .88$) when the measure was administered 4-8 weeks after initial testing (Gratz & Roemer, 2004).

Center for Epidemiological Studies Depression Scale Revised (CESD-R-20)

The Center for Epidemiological Studies Depression Scaled Revised (CESD-R-20; Van Dam & Earleywine, 2011) was used to assess depressive symptoms. The CESD-R-20 is a 20-item questionnaire, developed to closely reflect the diagnostic criteria for major depressive disorder (Van Dam & Earleywine, 2011). Participants respond to items on a Likert scale by indicating how often (“not at all or less than 1 day”, “1–2 days”, “3–4 days”, “5–7 days”) they have felt the way specified in the item. Possible scores range from 0-60. While a two-factor model has been explored for the measure, inter-factor correlations between samples were high which suggests redundancy (Van Dam & Earleywine, 2011). Thus, a one factor model appears to have the best goodness of fit, making the scale a unidimensional measure of depression. Cronbach’s alpha indicates a high level of internal consistency ($\alpha = .92$). Within our own study the measure also demonstrated good internal consistency ($\alpha = .93$).

Multidimensional Scale of Perceived Social Support (MSPSS)

Social support was assessed using the Multidimensional Measure of Perceived Social Support (MSPSS; Zimet et al., 1988). The MSPSS is a 12-item measure used to assess perceived support from three different sources: friends, family, and significant others (Zimet et al., 1988). Scores range from 7-84, with higher scores indicating greater levels of perceived social support. Principal components analysis of the measure reveal three Eigenvalues greater than one,

confirming the three factor structure of the measure (Zimet et al., 1988; Zimet, Powell, Farley, Werkman, & Berkoff, 1990).

Coefficient alphas range from .83 to .98 for the Significant Other subscale, .81 to .90 for the Family subscale, and .90 to .94 for the Friends subscale (Zimet et al., 1990). The entire measure has a Cronbach's alpha ranging from .84 to .92 (Zimet et al., 1990). Within our own study, Coefficient alphas were .95 for the Significant Other subscale, .93 for the Family subscale, and .95 for the Friends subscale. The entire measure had a Cronbach's alpha of .95. Therefore, the measure demonstrates adequate internal consistency. Scores on the MSPSS have been inversely correlated to measures of depression, which is support for the measure's construct validity (Zimet et al., 1988).

Statistical Analyses

To investigate hypothesis 1, we used Pearson's bivariate correlations. Specifically, ACEs were hypothesized to be positively related to both difficulties in emotion regulation and depression. Conversely, ACEs were hypothesized to be negatively associated with perceived social support. Finally, depression was hypothesized to be positively related to difficulties in emotion regulation. A recommended cutoff of $r > .80$ was used to determine whether the variables demonstrated an excessive degree of multicollinearity (Katz, 2011).

To investigate hypothesis 2 [i.e., the relationship between ACEs and depression will be mediated by emotion regulation (see *Figure 1*)] we used Hayes (2013) PROCESS macro model 4 to test for simple mediation. To investigate hypothesis 3 [i.e., within the mediation model, social support will act as a protective factor on the pathway from emotion regulation to depressive symptoms (see *Figure 2*)], we used the Hayes (2013) PROCESS macro model 14 to test for moderated mediation. Finally, to investigate hypothesis 4 [i.e., the moderating effect of social

support on the link between emotion regulation difficulties and depression symptoms will be greater for individuals with greater ACE exposures compared to individuals who have lower or no ACE exposures (See *Figure 3*), we used the Hayes (2013) PROCESS macro model 3 to test for moderated moderation. For all PROCESS models, bootstrapping frequencies were set at 5,000 and used to generate a 95% confidence interval. The PROCESS bootstrapping methods entail a statistical process of extracting, resampling, and replacement of cases within a dataset.

A power analysis was conducted using the “pwr” package within the R Statistical Computing program in order to determine if our sample size had sufficient statistical power to support the moderation analysis (Champlery, 2018). According the analysis, at a power level set at .80, our sample of $N = 766$ has sufficient statistical power to detect an effect size as small as .03.

CHAPTER 3

RESULTS

We ran descriptive analyses to better understand the occurrence of ACEs and depression in our sample. Regarding ACEs, our sample's range was consistent with the possible range (0-10), the mean ACE score was 2.0, the median number of ACEs was 1, and the mode was 0. Regarding the percent of our sample that endorsed ACEs, 35.1% endorsed 0 ACEs, 24.5% endorsed 1 ACE, 12% endorsed 2 ACEs, 6.6% endorsed 3 ACEs, and 21.7% endorsed 4 or more ACEs. Regarding depression symptoms, our sample's range (0-58) was generally consistent with the possible range (0-60). The mean depression score was 20. Scores of 16 or more indicates one is at risk for clinical depression. 56.4% of our sample had scores of 16 or higher.

As hypothesized, variables were correlated in the expected direction (see Table 2 for correlations and descriptive statistics). Adverse childhood experiences had a significant positive association with emotional regulation difficulties and depression ($r = .255, p < .001$; $r = .331, p < .001$). Adverse childhood experiences were also significantly associated with less perceived social support ($r = -.309, p < .001$). Higher levels of emotion regulation difficulties were significantly associated with more severe depression ($r = .642, p < .001$). Further, correlation coefficients indicated emotion regulation difficulties and depression were significantly related to lower perceived social support ($r = -.364, p < .001$; $r = -.383, p < .001$). Variables did not exceed the recommended cutoff for multicollinearity (Katz, 2011).

Table 2.
Bivariate Correlations & Descriptive Statistics

Variable	1	2	3	4
ACEs	1	-	-	-
DERS	.255**	1	-	-
CESD	.331**	.642**	1	-
MSPSS	-0.309**	-0.364**	-0.383**	1
<i>N</i>	591	701	604	646
<i>M</i>	2.00	89.91	27.8	5.36
<i>SD</i>	2.33	27.78	12.85	1.24
α	.81	.96	.93	.95
<i>Min.</i>	0	36	8	1
<i>Max.</i>	10	169	64	7

Note. ** $p < .01$, * $p < .05$. ACEs (Adverse Childhood Experiences Questionnaire); DERS (Difficulties in Emotion Regulation Scale); CESD (Center for Epidemiological Studies Depression Scale Revised); MSPSS (Multidimensional Scale of Perceived Social Support. Min. and Max. indicate age range of the sample. M and SD are used to indicate mean and standard deviation respectively.

All model analyses were conducted in SPSS using the Hayes PROCESS macro (Hayes, 2013). Results of these analyses are represented in Table 3. The simple mediation model analysis was conducted first, see *Figure 1*. The total effect of the model was significant, $F(2,528) = 214.98$, $R^2 = .45$, $p < .001$. The direct effect of ACEs on depression (c path) was also significant, $B = 1.02$, $SE = .18$, $t = 5.53$, $p < .001$. This indicates adversity in childhood is a significant predictor of depression later in life. The path from emotion regulation to depression (b path) was significant, $B = .28$, $SE = .02$, $t = 18.05$, $p < .001$. This suggests difficulties in emotion regulation are also a significant predictor in the developmental of adulthood depression. The indirect effect of childhood adversity on depression through difficulties in emotion regulation (c' path) was significant, $B = .80$, $SE = .13$, 95% CI [.54, 1.08], $p < .001$. Significant mediation is indicated by the p value being $< .05$ and the fact that the 95% confidence interval did not include zero. This indicates that difficulties in emotion regulation are one mechanism of risk transmission between

adversity in childhood and depression in adulthood. Further, emotion regulation difficulties were also found to be significantly predictive of depression when controlling for ACEs, $B = 1.02$, $SE = .02$, $t = 5.53$, $p < .001$. Thus, these results lend support to Hypothesis 2 of the current study.

Table 3

<i>Illustration of Model 1 bootstrapped mediation analysis</i>				
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>Bootstrapped 95% CI</i>
<i>a</i>	1.02	0.18	<.001	.66 - 1.38
<i>b</i>	0.28	0.02	<.001	.25 - .31
<i>c</i>	0.18	0.18	<.001	.66 - 1.38
<i>c'</i>	0.80	0.14		.54 - 1.08

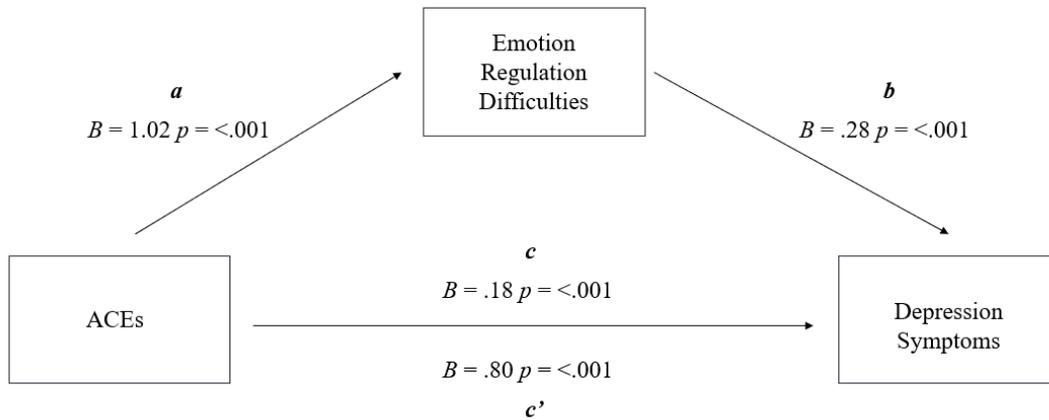
Note. Illustration of Model 1 bootstrapped mediation analysis testing the effect of adverse childhood events (X) on depression (Y) as mediated through difficulties in emotion regulation (M). Percentile 95% bootstrap distributions are defined using values that mark the lower and upper 2.5% of each distribution. CI = confidence interval

<i>Illustration of Model 2 Moderated Mediation Analysis</i>				
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>Bootstrapped 95% CI</i>
<i>a</i>	0.85	0.19	<.001	.48 - 1.22
<i>b</i>	0.27	0.07	<.001	.14 - .41
<i>m x w</i>	-0.00	0.01	0.83	-.03 - 0.02

Note. Illustration of Model 2 bootstrapped moderated mediation analysis testing the effect of social support (W) on the pathway between difficulties in emotion regulation (M) and depression (Y). CI = confidence interval

Figure 1.

Simple mediation model

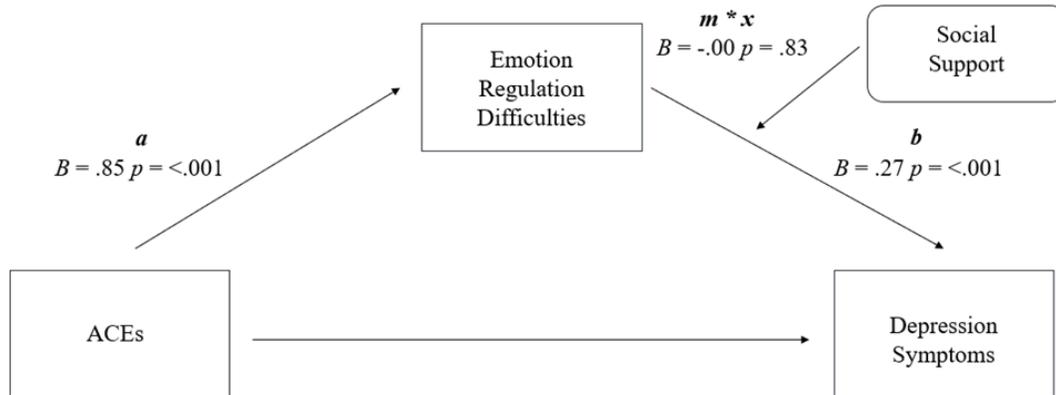


Note. ACEs = Adverse Childhood Experiences

The moderated mediation model in which social support moderates the relationship between emotion regulation difficulties and depression was tested next, see *Figure 2*. While the overall model was significant [$F(4, 522) = 113.70$, $R^2 = .47$, $p < .001$], the interaction term of perceived social support x emotion regulation difficulties was not significant, $B = -.003$, $SE = .01$, $t = -.22$, $p = .827$, 95% CI $[-.03, .02]$. Further, the interaction effect did not significantly impact the coefficient of determination, $F(1, 522) = .05$, $R^2 < .00$, $p = .83$. Thus, social support was not found to significantly impact the strength of the relation between emotion regulation difficulties and depression.

Figure 2.

Moderated mediation model

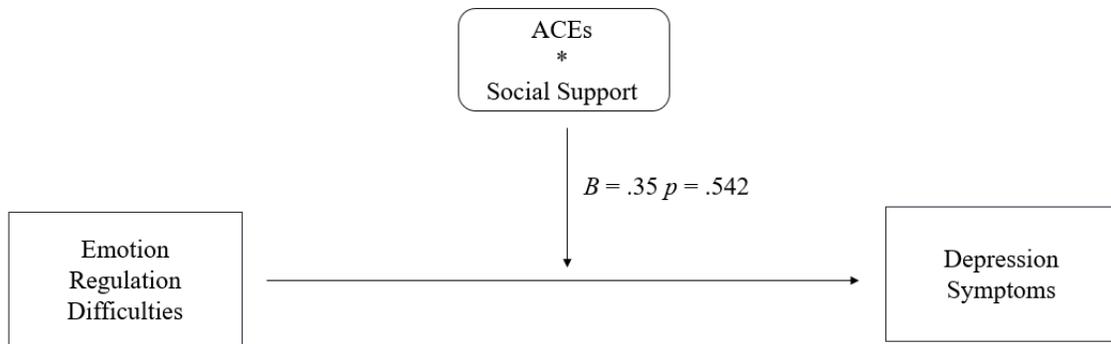


Note. ACEs = Adverse Childhood Experiences

It was also hypothesized those with more severe childhood adversity may benefit more from social support than those with less childhood adversity, see *Figure 3*. In order to test this hypothesis, a moderated moderation analysis was conducted in order to test if the interaction between ACEs and perceived social support was a significant buffer on the pathway between emotion regulation difficulties and depression. While the overall model was significant [$F(7,519) = 66.28, R^2 = .47, p < .001$], the interaction term of perceived social support x ACEs was not significant, $B = .35, SE = .58, t = .61, p = .542, 95\% CI [-.79, 1.50]$. These results suggest those with more severe childhood adversity are no more likely than those with fewer ACEs to benefit from social support as a buffer against depression within the context of emotion regulation difficulties, see *Figure 3*.

Figure 3.

Moderated moderation model



Note. ACEs = Adverse Childhood Experiences

CHAPTER 4

DISCUSSION

The pervasive and cascading consequences of ACE exposure makes the subject a national health concern, and research on ways to build resilience against negative health outcomes in those who have endured ACE exposure is greatly needed. The experience of adversity in childhood has a cascading negative impact on those who are exposed, resulting in risk for negative mental and physical outcomes across the lifespan. Approximately half of the population has experienced some form of ACE exposure in their first 18 years of life (Centers for Disease Control and Prevention, 2016). Additionally, as the number of ACE exposures increases, the risk for such negative outcomes also significantly increases, suggesting a dose response (Layne et al., 2014). Depression is one such outcome which has been linked to ACE exposure (Felitti et al., 1998; Freeman, 2014). Depression claims the lives of approximately 5% of the population and is one of the most common internalizing disorders (Ferrari et al., 2013). Thus, research examining the links between ACEs and depression, as well as potential protective factors, is important to furthering the scientific knowledge of trauma effects in childhood and how we can combat the manifestation of depression later in life.

The current study aimed to confirm the role of emotion regulation difficulties as a mechanism of risk transmission from ACEs to depression later in life. Further, the study aimed to examine the role of perceived social support as a protective buffer against depression for those with emotion regulation difficulties as a result of ACE exposure. The findings did *not* support the hypothesis that social support may act as a buffer against depression in those with emotion regulation difficulties. Despite this, our findings did indicate emotion regulation difficulties was a mechanism of risk transmission between ACEs and depression in adulthood. These findings

corroborate and add to the existing literature on the role of emotion regulation in the manifestation and maintenance of mental disorders in those who have experienced childhood adversity.

Regarding bivariate relationships between study variables, our results supported hypothesis 1. Specifically, ACEs were positively related to emotion regulation difficulties; ACES were positively related to depression, and ACEs were negatively related to perceived social support. It was also interesting that bivariate correlations indicated that perceived social support was negatively related to emotion regulation difficulties and depressive symptomology. In other words, as ACE exposure, emotion regulation difficulties, and depressive symptomology increased, perceived social support decreased. While no causal implications can be drawn from bivariate correlations, they lend some support to the complex interplay between childhood adversity, functional difficulties, and mental health.

Of note, Regarding the mediation model (see *Figure 1*), our results lent support to hypothesis 2. Specifically, the results indicated partial mediation suggesting that emotion regulation difficulties partially explain the link between ACEs and depression. In other words, though difficulties in emotion regulation may perpetuate symptoms of depression in adulthood, adversity in childhood still independently increases risk for depression symptomology. The experience of adversity early in life is linked to several risks related to the development of depression including neurobiological changes in the brain, substance use, chronic disease, and low socioeconomic status (Birk et al., 2019; Danese & McEwen, 2012; Felitti et al., 1998; Font & Maguire-Jack, 2016). Indeed, some studies examining populations with ACE exposure have found rates of depression over twice that of rates found in the general population (Balistreri & Alvira-Hammond, 2016; Felitti et al., 1998; Waraich et al., 2004). Considering these factors, it

makes sense ACEs would contribute to depressive symptoms independently of emotion regulation difficulties.

We did not find support for hypothesis 3, that social support would serve as a protective factor in the context of emotion regulation difficulties and depression. Our original hypothesis was based on two theories, the theory of interpersonal regulation (Marroquín, 2011) and Cohen and Wills' (1985) buffer theory of social support, that propose interpersonal regulation can serve as an emotion regulation strategy when internal resources for coping with difficult life events are low. Within the interpersonal regulation theory, friends, family, and significant others may be an external resource of regulation and features of supportive relationships such as connectedness, trust, advice, and even distraction may serve as a regulatory strategy in and of themselves when internal regulatory strategies fail. Those who are high in their tendency to use interpersonal regulation tend to be more socially connected (Williams et al., 2018). However, while social support and interpersonal regulation are related constructs they can be differentiated from one another (Williams et al., 2018). Examination of social support in the current study may not have captured the participants' tendency or efficacy in using interpersonal regulation.

Further examination of the bivariate correlations may also serve as a potential means of interpretation regarding the non-significant findings of hypothesis 3 in the current study. While separate constructs, previous research has found that positive benefits of interpersonal regulation appear to be related to higher ratings of social support (Williams et al., 2018). In our current sample, ACEs, depression, and emotion regulation difficulties were negatively correlated with perceived social support. It may be then that the individuals who would most benefit from interpersonal regulation are not able to benefit from this external regulation strategy because they are lacking in close relationships. Indeed, when we consider the features of the aforementioned

constructs, one can see how they could potentially impact the development and maintenance of close relationships.

Regarding the relation between ACEs and social support, it is important to consider that ACEs occur with the context of early relationships, often including family and close family friends (Balistreri & Alvira-Hammond, 2016). One of the groups examined within the measure of perceived social support is family. Family may then not be considered a source of support, because this group may have contributed to the individual's ACE exposure. Further, early experiences of dysfunctional relationships and insecure attachments, may contribute to expectations and interactions within the context of relationships later in life, making it more difficult to foster healthy relationships that can serve as a source of support (Poole, Dobson, & Pusch, 2018). Indeed, ACEs have been linked to higher rates of insecure attachment from childhood continuing into adulthood (Baer & Martinez, 2006; Cicchetti & Banny, 2014; Murphy et al., 2014).

Regarding the relation between emotion regulation difficulties and social support, emotion regulation problems may also be a perpetuating factor in the lack of perceived social support found in those with ACEs. Features of emotion regulation difficulties such as affective intensity, blunted affectivity, and use of emotion regulation strategies such as suppression, avoidance, and rumination have been linked to maladaptive functioning and negative mental health outcomes (Herr, Rosenthal, Geiger, & Erikson, 2013; Marroquín & Nolen-Hoeksema, 2015; Poole et al., 2018). It may be difficult to develop and maintain relationships when one has trouble regulating their emotions. If one is often in crisis, prone to emotionally intense outbursts, frequently ruminates on negative thoughts and emotions, or suppresses emotions, it may be that these individuals alienate others who could be potential relational resources. In fact, other studies

have found a link between emotion regulation difficulties and interpersonal difficulties (Blair et al., 2015; Herr et al., 2013; Poole et al., 2018; Spinrad et al., 2006).

Regarding the relation between depression and social support, features of depression may also contribute to lack of perceived social support. Symptoms of depression are largely defined by persistent feelings of sadness, worthlessness, fatigue, and loss of interest (American Psychiatric Association, 2013). If one is plagued by loss of interest, they are less likely to leave the house or participate in activities. This makes it considerably more difficult for individuals with depression to sustain contact with people in their support system, as well as hampers their ability to form new relationships. Other behavioral features of individuals with depression may also impact interpersonal success. For example, negative views of the world, self, and others are global and these negative themes are likely to emerge in conversations with those affected by depression (Joiner & Timmons, 2009). Due to global features of depression, depressed individuals also tend both seek out and elicit more negative feedback from others (Joiner & Timmons, 2009). Excessive reassurance-seeking utilized to affirm feelings of worth may also become frustrating when interacting with individuals with depression (Coyne, 1976; Joiner & Timmons, 2009; Petty, 2004). In fact, there is considerable research linking depression to social problems (Coyne, 1976; Joiner & Timmons, 2009; Petty, 2004).

Coupled with the findings that ACEs, emotion regulation difficulties, and depression are individually negatively associated with perceived social support, one must also consider the current study's population of focus (ACEs exposed individuals) is impacted by all three. The cumulative effects may then have an even greater impact on these individual's ability to sustain healthy relationships. Thus, while social support may potentially be of benefit in combatting

against depression, lack of social support within this population may make the effects undetectable.

Strengths and Limitations

When considering the findings of the current study, it is important to hold both the strengths and limitations of the study design in mind. One strength of the current study is the large sample size ($N = 766$). The large sample size mitigates the impact of outliers and margin of error, as well as supports sufficient power to detect small effect sizes. Another strength of the study is that self-report questionnaires allow participants to report their own experiences and desires without researcher interference. However, self-report studies also pose some validity problems, as participant response style may be subject to exaggeration or positive responses due to social desirability. The ACEs measure also relied upon retrospective reports of adversity in childhood, meaning data was subject to reporting error and the fact humans are often inaccurate historians. Finally, participants consisted of predominantly white college students at a public university in the Southeast. Thus, findings may not generalize to other age groups, ethnicities, or regions in the United States.

Future Directions

Considering the aforementioned limitations of the current study, future research would benefit from studies with a longitudinal design so that we may better understand the temporal relations between study variables. Future studies would also benefit from more diverse samples from different ethnicities, religions, regions, and social classes. In addition to strengthening study design to bolster internal and external validity, the literature would benefit from additional research on emotion regulation difficulties and related evidence-based treatments. A great deal of literature supports emotion regulation difficulties a core component of mental health problems

and functional difficulties (Aldao et al., 2010; Cloitre et al., 2018; Eisenberg & Spinrad, 2004; Herr et al., 2013; Poole et al., 2018; Stevens et al., 2013). Indeed, some evidence suggests transdiagnostic emotion regulation treatment may be effective in treating several forms of psychopathology (Sloan et al., 2017). Such treatments should be studied within populations affected by ACE exposure, who are at heightened risk for development of psychopathology (Felitti et al., 1998). Future studies may also consider examining the effects of transdiagnostic emotion regulation treatments on functional domains such as interpersonal functioning as successful treatment may also enhance individuals' ability to form and maintain healthy relationships.

In sum, this study confirms that emotion regulation difficulties are one mechanism through which ACEs and depression are linked. Further, this study expands the literature on social support by indicating that social support alone is not enough to buffer the impact of emotion regulation problems on depression risk. Future research should continue focusing on ways to build resilience in those with adversity in childhood. The negative of cascading consequences of ACEs, which can even lead to untimely early death, makes the phenomena a national health concern. Findings that shed light on ways to buffer against these negative consequences should be disseminated and used translationally to inform evidence-based treatments and interventions aimed at reducing the negative impact of ACEs in individuals who have been exposed.

REFERENCES

- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*(2), 217–237.
doi:10.1016/j.cpr.2009.11.004
- Alloway, R., & Bebbington, P. (1987). The buffer theory of social support- a review of the literature. *Psychological Medicine, 17*, 91–108.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association.
- Angelakis, S., & Nixon, R. D. V. (2015). The comorbidity of PTSD and MDD: Implications for clinical practice and future research. *Behaviour Change; Bowen Hills, 32*(1), 1–25.
- Baer, J. C., & Martinez, C. D. (2006). Child maltreatment and insecure attachment: A meta-analysis. *Journal of Reproductive and Infant Psychology, 24*(3), 187–197.
doi:10.1080/02646830600821231
- Baglivio, M. T., Wolff, K. T., Piquero, A. R., & Epps, N. (2015). The relationship between Adverse Childhood Experiences (ACE) and juvenile offending trajectories in a juvenile offender sample. *Journal of Criminal Justice, 43*(3), 229–241.
doi:10.1016/j.jcrimjus.2015.04.012
- Balistreri, K. S., & Alvira-Hammond, M. (2016). Adverse childhood experiences, family functioning and adolescent health and emotional well-being. *Public Health, 132*, 72–78.
doi:10.1016/j.puhe.2015.10.034
- Barch, D. M., Belden, A. C., Tillman, R., Whalen, D., & Luby, J. L. (2018). Early childhood adverse experiences, inferior frontal gyrus connectivity, and the trajectory of

- externalizing psychopathology. *Journal of the American Academy of Child & Adolescent Psychiatry*, 57(3), 183–190. doi:10.1016/j.jaac.2017.12.011
- Barrera, M. Jr., & Ainlay, S. L. (1983). The structure of social support: A conceptual and empirical analysis. *Journal of Community Psychology*, 11(2), 133–143.
- Beitchman, J. H., Zucker, K. J., Hood, J. E., DaCosta, G. A., & Akman, D. (1991). A review of the short-term effects of child sexual abuse. *Child Abuse & Neglect*, 15(4), 537–556. doi:10.1016/0145-2134(91)90038-F
- Birk, J. L., Kronish, I. M., Moise, N., Falzon, L., Yoon, S., & Davidson, K. W. (2019). Depression and multimorbidity: Considering temporal characteristics of the associations between depression and multiple chronic diseases. *Health Psychology*. doi:10.1037/hea0000737
- Blair, B. L., Perry, N. B., O'Brien, M., Calkins, S. D., Keane, S. P., & Shanahan, L. (2015). Identifying developmental cascades among differentiated dimensions of social competence and emotion regulation. *Developmental Psychology*, 51(8), 1062–1073. doi:10.1037/a0039472
- Bost, K. K., Vaughn, B. E., Washington, W. N., Cielinski, K. L., & Bradbard, M. R. (1998). Social competence, social support, and attachment: Demarcation of construct domains, measurement, and paths of influence for preschool children attending head start. *Child Development*, 69(1), 192–218. doi:10.1111/j.1467-8624.1998.tb06143.x
- Bowers, C. A., & Gesten, E. L. (1986). Social support as a buffer of anxiety: An experimental analogue. *American Journal of Community Psychology*, 14(4), 447–451.

- Britto, P. R., & Pérez-Escamilla, R. (2013). No second chances? Early critical periods in human development. *Social Science & Medicine*, *97*, 238–240.
doi:10.1016/j.socscimed.2013.09.001
- Broadhead, W. E., Kaplan, B. H., James, S. A., Wagner, E. H., Schoenbach, V. J., Grimson, R., ... Gehlbach, S. H. (1983). The epidemiologic evidence for a relationship between social support and health. *American Journal of Epidemiology*, *117*(5), 521–537.
doi:10.1093/oxfordjournals.aje.a113575
- Brown, T. A., Campbell, L. A., Lehman, C. L., Grisham, J. R., & Mancill, R. B. (2001). Current and lifetime comorbidity of the DSM-IV anxiety and mood disorders in a large clinical sample. *Journal of Abnormal Psychology*, *110*(4), 585–599. doi:10.1037/0021-843X.110.4.585
- Centers for Disease Control and Prevention. (2017, May 11). Adverse Childhood Experiences Presentation Graphics. Retrieved June 12, 2018, from
https://www.cdc.gov/violenceprevention/acestudy/ACE_graphics.html
- Centers for Disease Control and Prevention, K. P. (2016). *The ACE Study Survey Data [Unpublished Data]*. Retrieved from
<https://www.cdc.gov/violenceprevention/acestudy/about.html>
- Champley, S. (2018). pwr: Basic Function for Power Analysis (Version R package version 1.2-2). Retrieved from <https://CRAN.R-project.org/package=pwr>
- Choi, J. Y., & Oh, K. J. (2014). Cumulative childhood trauma and psychological maladjustment of sexually abused children in Korea: Mediating effects of emotion regulation. *Child Abuse & Neglect*, *38*(2), 296–303. doi:10.1016/j.chiabu.2013.09.009

- Christopher, C., Saunders, R., Jacobvitz, D., Burton, R., & Hazen, N. (2013). Maternal empathy and changes in mothers' permissiveness as predictors of toddlers' early social competence with peers: A parenting intervention study. *Journal of Child and Family Studies*, 22(6), 769–778. doi:10.1007/s10826-012-9631-z
- Cicchetti, D., & Banny, A. (2014). A developmental psychopathology perspective on child maltreatment. In *Handbook of developmental psychopathology* (3rd ed., pp. 723–741). Retrieved from <https://etsu.illiad.oclc.org/illiad/pdf/439102.pdf>
- Cloitre, M., Khan, C., Mackintosh, M.-A., Garvert, D. W., Henn-Haase, C. M., Falvey, E. C., & Saito, J. (2018). Emotion regulation mediates the relationship between ACES and physical and mental health. *Psychological Trauma: Theory, Research, Practice, and Policy*. doi:10.1037/tra0000374
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357. doi:10.1037/0033-2909.98.2.310
- Costa, E. C. V., & Gomes, S. C. (2018). Social support and self-esteem moderate the relation between intimate partner violence and depression and anxiety symptoms among Portuguese women. *Journal of Family Violence*, 33(5), 355–368. doi:10.1007/s10896-018-9962-7
- Coyne, J. (1976). *Psychiatry: Journal for the Study of Interpersonal Processes*, 39(1), 28–40.
- Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior*, 106(1), 29–39. doi:10.1016/j.physbeh.2011.08.019

- Dedovic, K., Duchesne, A., Andrews, J., Engert, V., & Pruessner, J. C. (2009). The brain and the stress axis: The neural correlates of cortisol regulation in response to stress. *NeuroImage: Amsterdam*, 47(3), 864–871. doi:2048/10.1016/j.neuroimage.2009.05.074
- Dunn, E. C., Nishimi, K., Gomez, S. H., Powers, A., & Bradley, B. (2018). Developmental timing of trauma exposure and emotion dysregulation in adulthood: Are there sensitive periods when trauma is most harmful? *Journal of Affective Disorders*, 227, 869–877. doi:10.1016/j.jad.2017.10.045
- Egeland, B., Sroufe, A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. *Child Abuse & Neglect*, 7(4), 459–469. doi:10.1016/0145-2134(83)90053-4
- Eisenberg, N., Eggum, N. D., & Di Giunta, L. (2010). Empathy-related responding: associations with prosocial behavior, aggression, and intergroup relations. *Social Issues and Policy Review*, 4(1), 143–180. doi:10.1111/j.1751-2409.2010.01020.x
- Eisenberg, N., & Spinrad, T. L. (2004). Emotion-related regulation: Sharpening the definition. *Child Development*, 75(2), 334–339. doi:10.1111/j.1467-8624.2004.00674.x
- Eisenberg, N., Wentzel, M., & Harris, J. D. (1998). The role of emotionality and regulation in empathy-related responding. *School Psychology Review; Bethesda*, 27(4), 506.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine*, 14(4), 245–258. doi:10.1016/S0749-3797(98)00017-8
- Ferrari, A. J., Somerville, A. J., Baxter, A. J., Norman, R., Patten, S. B., Vos, T., & Whiteford, H. A. (2013). Global variation in the prevalence and incidence of major depressive

- disorder: A systematic review of the epidemiological literature. *Psychological Medicine; Cambridge*, 43(3), 471–481. doi:2048/10.1017/S0033291712001511
- Font, S. A., & Maguire-Jack, K. (2016). Pathways from childhood abuse and other adversities to adult health risks: The role of adult socioeconomic conditions. *Child Abuse & Neglect*, 51, 390–399. doi:10.1016/j.chiabu.2015.05.013
- Ford, M. E., Tilley, B. C., & McDonald, P. E. (1998). Social support among african-american adults with diabetes, part 2: A review. *Journal of the National Medical Association; Washington*, 90(7), 425–432.
- Freeman, P. A. C. (2014). Prevalence and relationship between adverse childhood experiences and child behavior among young children. *Infant Mental Health Journal*, 35(6), 544–554. doi:10.1002/imhj.21460
- Glaser, J.-P., van Os, J., Portegijs, P. J. M., & Myin-Germeys, I. (2006). Childhood trauma and emotional reactivity to daily life stress in adult frequent attenders of general practitioners. *Journal of Psychosomatic Research*, 61(2), 229–236. doi:10.1016/j.jpsychores.2006.04.014
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment; New York*, 26(1), 41–54. doi:2048/10.1023/B:JOBA.0000007455.08539.94
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: The Guilford Press.
- Heberle, A. E., Krill, S. C., Briggs-Gowan, M. J., & Carter, A. S. (2015). Predicting externalizing and internalizing behavior in kindergarten: Examining the buffering role of

- early social support. *Journal of Clinical Child & Adolescent Psychology*, 44(4), 640–654.
doi:10.1080/15374416.2014.886254
- Hébert, M., Langevin, R., & Oussaïd, E. (2018). Cumulative childhood trauma, emotion regulation, dissociation, and behavior problems in school-aged sexual abuse victims. *Journal of Affective Disorders*, 225, 306–312. doi:10.1016/j.jad.2017.08.044
- Herr, N. R., Rosenthal, M. Z., Geiger, P. J., & Erikson, K. (2013). Difficulties with emotion regulation mediate the relationship between borderline personality disorder symptom severity and interpersonal problems: Emotion REG and interpersonal functioning in BPD. *Personality and Mental Health*, 7(3), 191–202. doi:10.1002/pmh.1204
- Hirschfeld, R. M. A. (2001). The comorbidity of major depression and anxiety disorders: Recognition and management in primary care. *Primary Care Companion to The Journal of Clinical Psychiatry*, 3(6), 244–254.
- Hopfinger, L., Berking, M., Bockting, C. L. H., & Ebert, D. D. (2016). Emotion regulation mediates the effect of childhood trauma on depression. *Journal of Affective Disorders*, 198, 189–197. doi:10.1016/j.jad.2016.03.050
- Huh, H. J., Kim, K. H., Lee, H.-K., & Chae, J.-H. (2017). The relationship between childhood trauma and the severity of adulthood depression and anxiety symptoms in a clinical sample: The mediating role of cognitive emotion regulation strategies. *Journal of Affective Disorders*, 213, 44–50. doi:10.1016/j.jad.2017.02.009
- Joiner, T. E. Jr., & Timmons, K. A. (2009). Depression in its interpersonal context. In *Handbook of Depression* (2nd ed., pp. 322–339). New York, NY: The Guilford Press.
- Kähkönen, O., Kankkunen, P., Miettinen, H., Lamidi, M.-L., & Saaranen, T. (2017). Perceived social support following percutaneous coronary intervention is a crucial factor in patients

- with coronary heart disease. *Journal of Clinical Nursing*, 26(9–10), 1264–1280.
doi:10.1111/jocn.13527
- Katz, M. H. (2011). *Multivariable analysis: A practical guide for clinicians and public health researchers*. New York, NY: Cambridge University Press.
- Keller, J., Gomez, R., Williams, G., Lembke, A., Lazzeroni, L., Murphy, G. M., & Schatzberg, A. F. (2017). HPA axis in major depression: Cortisol, clinical symptomatology and genetic variation predict cognition. *Molecular Psychiatry; New York*, 22(4), 527–536.
doi:2048/10.1038/mp.2016.120
- Klimes-Dougan, B., & Garber, J. (2016). Regulatory control and depression in adolescents: Findings from neuroimaging and neuropsychological research. *Journal of Clinical Child & Adolescent Psychology*, 45(1), 1–5. doi:10.1080/15374416.2015.1123637
- Krause, N. (1987). Life stress, social support, and self-esteem in an elderly population. *Psychology and Aging*, 2(4), 349–356. doi:10.1037/0882-7974.2.4.349
- Layne, C. M., Greeson, J. K. P., Ostrowski, S. A., Kim, S., Reading, S., Vivrette, R. L., ... Pynoos, R. S. (2014). Cumulative trauma exposure and high risk behavior in adolescence: Findings from the National Child Traumatic Stress Network Core Data Set. *Psychological Trauma: Theory, Research, Practice, and Policy*, 6(Suppl 1), S40–S49.
doi:10.1037/a0037799
- Mackin, D. M., Perlman, G., Davila, J., Kotov, R., & Klein, D. N. (2017). Social support buffers the effect of interpersonal life stress on suicidal ideation and self-injury during adolescence. *Psychological Medicine; Cambridge*, 47(6), 1149–1161.
doi:2048/10.1017/S0033291716003275

- Marroquín, B. (2011). Interpersonal emotion regulation as a mechanism of social support in depression. *Clinical Psychology Review, 31*(8), 1276–1290.
doi:10.1016/j.cpr.2011.09.005
- Marroquín, B., & Nolen-Hoeksema, S. (2015). Emotion regulation and depressive symptoms: Close relationships as social context and influence. *Journal of Personality and Social Psychology, 109*(5), 836–855. doi:10.1037/pspi0000034
- Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology, 19*(3), 921–930.
doi:10.1017/S0954579407000442
- Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse & Neglect, 37*(11), 917–925.
doi:10.1016/j.chiabu.2013.07.011
- Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect, 38*(2), 224–233. doi:10.1016/j.chiabu.2013.09.004
- Mutran, E. J., Reed, P. S., & Sudba, S. (2001). Social support: Clarifying the construct with applications for minority populations. *Journal of Mental Health and Aging, 7*(1), 13.
- Norseth, C. H. (2017). *Stress, Depression, Social Support, and Help-Seeking in College Student-Athletes* (Ph.D., Loma Linda University). Retrieved from
<http://search.proquest.com/docview/1990238716/abstract/F990D273DB4447AEPQ/1>

- Paul A. Harris, Robert Taylor, Robert Thielke, Jonathon Payne, Nathaniel Gonzalez, & Jose G. Conde. (2009). Research electronic data capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support. Retrieved September 23, 2018, from J Biomed Inform website:
<https://projectredcap.org/resources/citations/>
- Petty, S. (2004). Interpersonal functioning deficits: Temporary or stable characteristics of depressed individuals? *Journal of Affective Disorders, 81*(2), 115–122.
doi:10.1016/S0165-0327(03)00158-7
- Pierce, G. R., Sarason, I. G., & Sarason, B. R. (1991). General and relationship-based perceptions of social support: Are two constructs better than one? *Journal of Personality and Social Psychology, 61*(6), 1028–1039. doi:10.1037/0022-3514.61.6.1028
- Poole, J. C., Dobson, K. S., & Pusch, D. (2017). Anxiety among adults with a history of childhood adversity: Psychological resilience moderates the indirect effect of emotion dysregulation. *Journal of Affective Disorders, 217*, 144–152.
doi:10.1016/j.jad.2017.03.047
- Poole, J. C., Dobson, K. S., & Pusch, D. (2018). Do adverse childhood experiences predict adult interpersonal difficulties? The role of emotion dysregulation. *Child Abuse & Neglect, 80*, 123–133. doi:10.1016/j.chiabu.2018.03.006
- Reblin, M., & Uchino, B. N. (2008). Social and emotional support and its implication for health. *Current Opinion in Psychiatry, 21*(2), 201–205. doi:10.1097/YCO.0b013e3282f3ad89
- Reid, G. M., Holt, M. K., Bowman, C. E., Espelage, D. L., & Green, J. G. (2016). Perceived social support and mental health among first-year college students with histories of

- bullying victimization. *Journal of Child and Family Studies*, 25(11), 3331–3341.
doi:10.1007/s10826-016-0477-7
- Robinson, L. R., Morris, A. S., Heller, S. S., Scheeringa, M. S., Boris, N. W., & Smyke, A. T. (2009). Relations between emotion regulation, parenting, and psychopathology in young maltreated children in out of home care. *Journal of Child & Family Studies*, 18(4), 421–434. doi:10.1007/s10826-008-9246-6
- Russell, D. W., & Cutrona, C. E. (1991). Social support, stress, and depressive symptoms among the elderly: Test of a process model. *Psychology and Aging*, 6(2), 190–201.
doi:10.1037/0882-7974.6.2.190
- Sarason, I. G., & Sarason, B. R. (2009). Social support: Mapping the construct . *Journal of Social and Personal Relationships*, 26(1), 113–120.
doi:10.1177/0265407509105526
- Sheridan, M. A., & McLaughlin, K. A. (2014). Dimensions of early experience and neural development: Deprivation and threat. *Trends in Cognitive Sciences*, 18(11), 580–585.
doi:10.1016/j.tics.2014.09.001
- Shipman, K., Zeman, J., Penza, S., & Champion, K. (2000). Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development and Psychopathology*, 12(1), 47–62.
doi:10.1017/S0954579400001036
- Sloan, E., Hall, K., Moulding, R., Bryce, S., Mildred, H., & Staiger, P. K. (2017). Emotion regulation as a transdiagnostic treatment construct across anxiety, depression, substance, eating and borderline personality disorders: A systematic review. *Clinical Psychology Review*, 57, 141–163. doi:10.1016/j.cpr.2017.09.002

- Soenke, M., Hahn, K. S., Tull, M. T., & Gratz, K. L. (2010). Exploring the relationship between childhood abuse and analogue generalized anxiety disorder: The mediating role of emotion dysregulation. *Cognitive Therapy and Research; New York*, 34(5), 401–412. doi:2048/10.1007/s10608-009-9264-8
- Spinrad, T. L., Eisenberg, N., Cumberland, A., Fabes, R. A., Valiente, C., Shepard, S. A., ... Guthrie, I. K. (2006). Relation of emotion-related regulation to children's social competence: A longitudinal study. *Emotion*, 6(3), 498–510. doi:10.1037/1528-3542.6.3.498
- Stevens, N. R., Gerhart, J., Goldsmith, R. E., Heath, N. M., Chesney, S. A., & Hobfoll, S. E. (2013). Emotion regulation difficulties, low social support, and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy*, 44(1), 152–161. doi:10.1016/j.beth.2012.09.003
- Terr, L. C. (1985). Psychic trauma in children and adolescents. *Psychiatric Clinics of North America*, 8(4), 815–835.
- Van Dam, N. T., & Earleywine, M. (2011). Validation of the center for epidemiologic studies depression scale—revised (CESD-R): Pragmatic depression assessment in the general population. *Psychiatry Research*, 186(1), 128–132. doi:10.1016/j.psychres.2010.08.018
- Wang, X., Cai, L., Qian, J., & Peng, J. (2014). Social support moderates stress effects on depression. *International Journal of Mental Health Systems; London*, 8. doi:2048/10.1186/1752-4458-8-41
- Waraich, P., Goldner, E. M., Somers, J. M., & Hsu, L. (2004). Prevalence and incidence studies of mood disorders: A systematic review of the literature. *The Canadian Journal of Psychiatry*, 49(2), 124–138. doi:10.1177/070674370404900208

- Williams, W. C., Morelli, S. A., Ong, D. C., & Zaki, J. (2018). Interpersonal emotion regulation: Implications for affiliation, perceived support, relationships, and well-being. *Journal of Personality and Social Psychology, 115*(2), 224–254. doi:10.1037/pspi0000132
- Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion, 13*(5), 803–810. doi:10.1037/a0033839
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*(1), 30–41.
- Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment, 55*(3&4), 610–617.

VITA

RACHEL M. CLINGENSMITH

- Education: Elizabethton City High School, Elizabethton, Tennessee
B.S. Clinical Psychology, East Tennessee State University,
Johnson City, Tennessee, 2017
- Professional Experience: Research Assistant, CAPTVRE/CHIPC Lab, Dr. Jason Steadman,
East Tennessee State University, 2015-2017
Graduate Assistant, ARCH Lab, Dr. Diana Morelen, East
Tennessee State University, 2017-2019
Clinical Extern, Johnson City Family Medicine, East Tennessee
State University, 2019
- Posters and Presentations: **Clingensmith, R.**, & Morelen, D. (2019). We all need somebody
to lean on: Social support as a protective factor for
individuals with childhood adversity. Poster presented
at the Appalachian Student Research Forum, East
Tennessee State University, Johnson City, TN.
Heineken, K., Morelen, D., & **Clingensmith, R.** (2019).
Mindfulness and religiosity/spirituality as protecting factors
for internalizing symptoms associated with adverse
childhood experiences: A moderated moderation model
(honors undergraduate thesis). Poster presented at the
Appalachian Student Research Forum, East Tennessee
State University, Johnson City, TN.
Tatro, K. Morelen, D., & **Clingensmith R.** (2019). Quality of life
as a protective factor against substance misuse among
adults with a history of adverse childhood experiences
(ACEs). Poster presented at the Appalachian Student
Research Forum, East Tennessee State University, Johnson
City, TN.

Morelen, D., Otwell, R., Dolson, R., **Clingensmith, R.**,
Rosenblum, K., & Muzik, M. (2018). Implementation of a
trauma informed parenting intervention to promote
maternal mental health and reduce child risk. Poster
presented at the Journal of Clinical Child and Adolescent
Psychology (JCCAP) Future Directions Forum,
Washington, DC.

Clingensmith, R.M., & Morelen, D. (April, 2018). Link between
parenting style and offspring empathy as mediated by a
relationship of familial emotional climate and emotional
regulation. Oral presentation presented at the Appalachian
Student Research Forum, East Tennessee State University,
Johnson City, TN.

Honors and Awards:

Second Place, Graduate Student-Doctoral Social Sciences,
Appalachian Student Research Forum, East Tennessee
State University, 2019

Undergraduate Student Travel Grant, Honors College, East
Tennessee State University, 2017

Johnia Hope Berry Scholarship for Psychology, Department of
Psychology, East Tennessee State University, 2017