

Copyright

by

Katherine Marie Ranton

2022

THE INFLUENCE OF CHILDHOOD MALTREATMENT AND
TRAIT MINDFULNESS ON THE MENTAL
HEALTH OF EMERGING ADULTS

by

Katherine Marie Ranton, MS

DISSERTATION

Presented to the Faculty of
The University of Houston-Clear Lake
In Partial Fulfillment
Of the Requirements
For the Degree

DOCTOR OF PSYCHOLOGY

in Health Service Psychology

THE UNIVERSITY OF HOUSTON-CLEAR LAKE

AUGUST, 2022

THE INFLUENCE OF CHILDHOOD MALTREATMENT AND
TRAIT MINDFULNESS ON THE MENTAL
HEALTH OF EMERGING ADULTS

by

Katherine Marie Ranton

APPROVED BY

Gerald G. Strait, Ph.D., Chair

Julia E. Strait, Ph.D., Committee Member

Valerie Morgan, Ph.D., Committee Member

RECEIVED/APPROVED BY THE COLLEGE OF HUMAN SCIENCES AND
HUMANITIES:

Samuel Gladden, Ph.D., Associate Dean

Glenn Sanford, Ph.D., Dean

Dedication

I dedicate this work to my parents, grandparents, and great-grandparents, it is because of the sacrifices you made, I have been privileged enough to pursue my dreams. Mom and Dad, your unconditional love, your self-less hard work, and your encouragement has allowed me to pursue my passions, I am forever grateful, I love you.

Acknowledgements

In addition to my dissertation committee, the following people deserve acknowledgement for their contribution to this research study: a) the staff at the University of Houston Clear Lake's Counseling Center for igniting my passion to work with college students and b) Dr. Mary Short for being a source of constant support, accountability, and laughter.

ABSTRACT

THE INFLUENCE OF CHILDHOOD MALTREATMENT AND
TRAIT MINDFULNESS ON THE MENTAL
HEALTH OF EMERGING ADULTS

Katherine Marie Ranton
University of Houston-Clear Lake, 2022

Dissertation Chair: Gerald G. Strait, Ph.D.

According to the United States Department of Health and Human Services (2020), over one million children are exposed to maltreatment annually (Norman, Hawkley, Ball, Bernston, & Cacioppo, 2013). Exposure to maltreatment in childhood is associated with multiple negative outcomes in adulthood, such as anxiety, depression, impairments in functioning, and lower levels of overall achievement. This study investigates the relationship between childhood maltreatment and its influence on depression, anxiety, and trait mindfulness. In this study, multiple regression analyses were used to determine if a moderating relationship exists between childhood maltreatment, trait mindfulness, and symptom severity of depression and anxiety in university students. Major findings can be used to inform clinical treatment and interventions used to meet the needs of this vulnerable population as they matriculate through college.

TABLE OF CONTENTS

CHAPTER I: INTRODUCTION.....	1
Childhood Maltreatment	2
Maltreatment Outcomes in a Collegiate Population: Anxiety and Depression.....	3
Mindfulness as a Protective Factor and Treatment	4
Theory of Change: Maladaptive Schema Development	7
Research Purpose	9
CHAPTER II: METHODOLOGY	11
Research Design.....	11
Participants.....	11
Measures	13
CHAPTER III: DATA ANALYSIS	18
Research Question 1: Maltreatment Multiplicity and Severity on Depression.....	18
Research Question 2: Maltreatment Multiplicity and Severity on Anxiety	18
Research Question 3: Trait Mindfulness on Anxiety and Depression	19
Research Question 4: Trait Mindfulness as a Moderator.....	19
CHAPTER IV: RESULTS.....	22
Research Question 1: Main Effects of Childhood Maltreatment on Depression.....	24
Research Question 2: Main Effects of Childhood Maltreatment on Anxiety	24
Research Question 3: Main Effects of Trait Mindfulness on Anxiety and Depression.....	24
Research Question 4: Moderation Analysis of Childhood Maltreatment, Trait Mindfulness, Anxiety, and Depression	25
Power Analyses.....	25
CHAPTER V: DISCUSSION.....	27
Maltreatment on Depression and Anxiety	27
Trait Mindfulness on Anxiety and Depression	30
Moderation: Trait Mindfulness, Anxiety, and Depression	31
Research Strengths and Limitations.....	33
Future Research	34
Conclusion	36

REFERENCES	37
APPENDIX A.....	58
APPENDIX B	62
APPENDIX C	68
APPENDIX D.....	71
APPENDIX E	72

CHAPTER I: INTRODUCTION

According to the United States Department of Health and Human Services (2020), over one million children are exposed to maltreatment annually. Children exposed to maltreatment are at increased risk of developing depression and anxiety in adulthood (Schury, Zimmerman, Umlauf, Hulbert, Guendel, Ziegenhain, & Kolassa, 2017). As some of these individuals enter college, their risk of developing anxiety and depression may increase even more, with the highest rates of anxiety and depression occurring among students ranging in ages from 20 to 29 (Lee & Kim, 2019). The average worldwide prevalence rate for depressive disorders among college students is 36.4% (American Psychological Association, 2013). Surprisingly, only 11.4 percent of students attending college seek mental health help at their university counseling centers (Lindsey, 2014). Given that many students do not seek services, it would behoove universities to provide preventive psychoeducation, such as mindfulness training, to students at-risk of developing anxiety and depression, such as those with a history of childhood maltreatment.

Among emerging adults, research indicates the use of mindfulness-based interventions increases positive emotions and decreases negative affect (Chi et al., 2018). Mindfulness based interventions aim to help individuals become aware of their present emotion, attend to tasks, and promote inner peace (Chi et al., 2018). Studies show mindfulness is effective in helping individuals diagnosed with anxiety and depression become self-aware, enhance coping skills, and approach situations with openness and acceptance (Chi et al., 2018; Kropp & Sedlmeier, 2019). In the emerging adult population, lower levels of mindfulness are associated with greater emotion dysregulation, difficulties engaging in goal directed behavior, and thought avoidance

(Prakash, Whitmoyer, Aldao, & Schirda, 2017). In addition, studies reveal individuals with past histories of physical and psychological maltreatment in childhood have lower levels of trait mindfulness and are more at risk for developing psychological disorders than their same aged peers (Arslan, 2017; Chi et al., 2018, Prakash, Whitmoyer, Aldao, & Schirda, 2017).

Ultimately, understanding the relationship between childhood maltreatment, states of mindfulness, and symptoms of anxiety and depression may help institutions of higher education identify and meet the needs of their students. Therefore, this study examines the moderating effects of college students' current trait mindfulness levels on the relationship between past childhood maltreatment and symptoms of depression and anxiety. In this study, first discussed are prevalence rates, outcomes, and a theory of change (i.e., maladaptive schema development) related to childhood maltreatment and the development of depression and anxiety. Based on this theory of change, it is posited and tested whether trait mindfulness weakens the relationship between childhood maltreatment and the development of depression and anxiety symptoms among university students.

Childhood Maltreatment

Childhood maltreatment is defined as exposure to familial dysfunction or abuse prior to the age of eighteen that results in the harm or exploitation of a child's health, development, or self-worth (United States Department of Health and Human Services et al., 2020). Over the course of childhood and adolescence, individuals may be exposed to one or more of the five forms of maltreatment: physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect. The United States Department of Health and Human Services (2020) defines physical abuse as a non-accidental injury to a child. Sexual abuse is the employment or coercion of a child to engage in a sexually explicit act

(United States Department of Health and Human Services et al., 2020). Emotional abuse occurs when there is an injury to the psychological capacity or emotional stability of a child (United States Department of Health and Human Services et al., 2020). Finally, neglect is defined as the failure of a parent or caregiver to provide food, clothing, shelter, medical care, or supervision to the degree that the child's health, safety, and well-being are threatened (United States Department of Health and Human Services et al., 2020). According to Mohr and Rosen (2017), over 600,000 college students report experiencing at least one form of maltreatment prior to the age of 18.

Maltreatment Outcomes in a Collegiate Population: Anxiety and Depression

Researchers found childhood maltreatment predicts the development of psychopathology and emotional disorders (Wolff & Shi, 2012; Buchanan, 2012). Individuals with significant histories of childhood maltreatment are at increased risk for interpersonal problems, self-regulation problems, aggression, and hopelessness (Wolff & Shi, 2012). Pertinent to this study, childhood maltreatment is strongly associated with increased depression and anxiety symptoms in adulthood (Agorastos, et al., 2014; Anda et al., 2006; Huh, Kim, Yu, & Chae, 2014; Rehan, Antfolk, Johansson, Jern, & Santtila, 2017).

Depression and anxiety among college students, especially those with histories of childhood maltreatment, is associated with decreased academic success and increased attrition rates (Cuijpers et al., 2015; Lindsey, 2014; Buchanan, 2012). Buchanan (2012) found college students with histories of maltreatment experience symptoms of anxiety and depression that impact their ability to complete academic tasks. Moreover, non-depressed college students without histories of maltreatment spent 5 or more hours studying and working during the week, whereas students with histories of maltreatment and diagnosed depression spent less than 2 hours per week engaging in these same

productive behaviors (Buchanan, 2012). Alarming, 9.0% of the students reporting depression and anxiety symptoms also report having thoughts of suicide (Buchanan, 2012).

These outcomes are concerning given that 5% to 35% of university students report having anxiety and/or depression (Buchanan, 2012; Eisenberg et al., 2007) and only 18% of these students seek treatment (Blanco et al., 2008). Students often refrain from receiving mental health services from their universities due to lack of time, fear of personal stigma, distrust of sharing information, as well as not perceiving the help as essential (Pedrelli et al., 2015). Understanding college students' current use of coping strategies, such as mindfulness, and whether these strategies buffer the relationship between maltreatment and anxiety and depression could provide insight for the development of future preventive interventions that aim to increase these skills without relying on underused college-based counseling centers. As described in the following sections, mindfulness-based interventions may help reduce anxiety and depression among college students with a history of maltreatment by targeting maladaptive schemas.

Mindfulness as a Protective Factor and Treatment

Mindfulness is a practice rooted in Eastern spiritual and philosophical traditions, defined as the ability to attend to one's experience in the present moment without judgment (Kabat-Zinn, 1994). The focus of mindfulness is the integration of bodily sensations, states of mind, and behavior to cultivate calmness and stability within one's own private experiences (Follette, Palm, & Pearson, 2006). Mindfulness involves self-regulation of attention and the ability to live moment to moment with recognition devoted to each event as it is occurring (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, Segal, Abbey, Speca, Velting, & Devins, 2004). In the 1970s, the field of psychology started to adopt principles of mindfulness, namely the use of awareness and acceptance as

antidotes for negative thinking patterns (Keng, Smoski, & Robins, 2013). Researchers found mindfulness-based interventions reduce rumination, emotional distress, and poor coping skills associated with anxiety and mood disorders (Kabat-Zinn, 1994; Keng, Smoski, & Robins, 2013).

During the early integration of mindfulness in therapy, researchers discovered awareness of moment-by-moment experiences led to increased self-regulation and an enhanced openness, curiosity, and acceptance of momentary distress and adversity (Keng, Smoski, & Robins, 2013). Acceptance within the context of mindfulness is not passive but is an acknowledgement of events without suppressing or becoming pre-occupied with one's emotional experience (Keng, Smoski, & Robins, 2013). Mindfulness based interventions used to treat symptoms of anxiety and depression focus on two core facets: self-regulation of attention and adoption of realistic and noncritical orientations toward one's experiences (Keng, Smoski, & Robins, 2013). These core facets of mindfulness help those with anxiety and depression overcome past maltreatment in two ways: 1) the release of negative thoughts and schemas and 2) acceptance of emotional states based on realistic attributions of the maltreatment (Keng, Smoski, & Robins, 2013).

In the present study, trait mindfulness specifically will be studied in relationship to childhood maltreatment and mental health outcomes. Trait mindfulness, or dispositional mindfulness, is defined as the innate capacity for an individual to maintain attention to present moment experiences with a non-judgmental attitude (Brown & Ryan, 2003). Trait mindfulness has known underlying neural connections associated with executive control, working memory, response selection, empathy, impulse control, and immune system regulation (Paul, Stanton, Greeson, Smoski, & Wang, 2013; Lyvers, Makin, & Toms, 2014). Furthermore, trait mindfulness is shown to be associated with

reductions in mental health vulnerabilities (Paul, Stanton, Greeson, Smoski, & Wang, 2013; Lyvers, Makin, & Toms, 2014).

While the present study evaluates the influence of trait mindfulness, it is important to note its relevance to state mindfulness, which is defined as the practice of meditation (Lau, et al., 2006). Through the practice of state mindfulness, trait mindfulness may be further developed following consistent training and practice (Kiken et al., 2015). However, without mindfulness-based interventions, trait mindfulness appears to be relatively stable and unchanging across the life span (Brown & Ryan, 2003). Through the repeated practice of mindfulness-based interventions, changes and shifts in mindful states may contribute to the enhancement of trait mindfulness (Kiken et al., 2015).

Researchers found mindfulness interventions produce robust and positive effects on a variety of outcomes for adults who have experienced maltreatment in childhood (Mendelson, Tandon, O'Brennan, Leaf, & Lalongo, 2015). Importantly, researchers have found that mindfulness interventions increase one's ability to manage adverse experiences and reduces states of anxiety and depression (Coffey & Hartman, 2008; Follette, Shapiro, Carlson, Astin, & Freedman 2006). Interventions of mindfulness help individuals with histories of maltreatment by teaching skills related to cognitive flexibility, acceptance, and emotional regulation. Maladaptive schemas and coping skills are altered through mindful observation, acting within the present moment, and evaluating events as they are without critical judgment. Research indicates mindfulness also helps individuals process traumatic experiences, reappraise difficult events, and address feelings of avoidance through acceptance and openness (Boyd, Lanius, & McKinnon, 2017). Universities could teach these techniques to help their students reduce

psychological distress, improving overall coping skills, thus weakening the relationship between maltreatment and the development of depression and anxiety.

Theory of Change: Maladaptive Schema Development

During childhood and throughout the lifespan, individuals form cognitive schemas or patterns of thoughts used to organize information (Reznaei, Ghazanfari, & Rezaee, 2016). These schemas enable young adults to navigate and develop an understanding of the world in which they live. Schemas are used, improved, and adjusted according to circumstances across the lifespan. Piaget describes the process of changing and adding to schemas as assimilation and accommodation (2000). Through assimilation, individuals take new information and add it to pre-existing schemas without making changes (Piaget, 2000). During the accommodation phase, individuals take new information and change their pre-existing schema to satisfy the introduction of new information (Piaget, 2000). In individuals with histories of childhood maltreatment, maladaptive schemas develop early on and continue throughout the life span, resulting in negative outcomes such as anxiety and depression (Rezaei, Ghazanfari, & Rezaee, 2016).

Kraus and colleagues (2011) found childhood maltreatment impacts how individuals develop schemas related to their self and others. Self-verification theory states individuals form and subsequently conform to their self-schemas over time (Madon, Willard, Gyll, & Scherr, 2011). These self-schemas develop throughout the lifespan, and are shaped by parents, caregivers, siblings, and peers (Madon, Willard, Gyll, & Scherr, 2011). Children raised in warm, friendly, praising, and positive learning environments tend to develop positive self-schemas and demonstrate higher levels of self-efficacy and achievement (Madon, Willard, Gyll, & Scherr, 2011). Conversely, children exposed to maltreatment tend to develop negative self-schemas, have poor self-esteem, negative self-

beliefs, and a perceived low ability to achieve which often leads to the development of depression and anxiety (Madon, Willard, Guyll, & Scherr, 2011).

Individuals with a history of childhood maltreatment, when confronted with positive praise, will often reject positive feedback due to negative self-schemas (Madon, Willard, Guyll, & Scherr, 2011). These negative self-schemas are reinforced through experiences of maltreatment (Madon, Willard, Guyll, & Scherr, 2011). Self-schemas, even when negative, allow for a stable sense of self despite changing contextual factors (Madon, Willard, Guyll, & Scherr, 2011). In accordance with self-verification theory, individuals exposed to maltreatment in childhood maintain these negative self-schemas and vigilant response sets due to repeated hyperarousal states, attention to potential threats, and high trait anxiety associated with repetitive trauma (Del Giudice, Hinnant, Ellis, & El-Sheikh, 2012). Moreover, individuals with a history of maltreatment may develop schemas in adulthood that sustain feelings of mistrust, isolation, inadequacy, defectiveness, and a fear of abandonment (Rezaei, Ghazanfari, & Rezaee, 2016).

The adaptive calibration model posits that these schemas and resulting behaviors are biologically protective and serve as tool for survival in the context of a dangerous environment; however, these schemas and behaviors become maladaptive when danger is not present. Specifically, they may cause an individual to assess a situation inaccurately thus evoking a highly negative and emotional arousal state often associated with the development of mood or anxiety disorders (Del Giudice, Hinnant, Ellis, & El-Sheikh, 2012). In repeated exposure to maltreatment, these schemas help individuals survive potential threats of abuse or harm in childhood and adulthood; however, these same schemas become detrimental to functioning when danger is not present. For example, exposure to maltreatment can cause the development of emotionally avoidant schemas (Rezaei, Ghazanfari, & Rezaee, 2016). The avoidance or blunted emotional reactions

during maltreatment may help a victim survive a traumatic experience, however, continual disconnect from the negative feelings and avoidance of distress associated with other non-threatening events may subsequently lead to increased symptoms of anxiety and depression (Rezaei, Ghazanfari, & Rezaee, 2016).

Mindfulness techniques may help address the restricting nature of maladaptive schemas. Mindfulness interventions help individuals with anxiety and depression by teaching the practice of non-judgment and the non-critical assessment of events (Friedman, 2010). The core facets of mindfulness interventions are observing, describing, nonreacting, and awareness which aim to help individuals with maladaptive schemas alter their states of mind (Parsons, Luebbe, & Clerkin, 2017). Mindfulness skills enable individuals to recognize their thoughts or schemas in the present moment without assigning negative emotional attributions to them (Parsons, Luebbe, & Clerkin, 2017). Personal insight of negative schemas allows for individuals to observe their current state and become more flexible in their reactions by practicing non-judgment (Parsons, Luebbe, & Clerkin, 2017). The re-evaluation and non-critical assessment of traumatic events, such as childhood maltreatment, allows individuals to label their past or current experiences realistically and observe their emotional states nonjudgmentally (Parsons, Luebbe, & Clerkin, 2017). Primarily, mindfulness-based interventions are used to alter maladaptive schemas because of the focus on observing and describing events in the present moment. The focus of mindfulness is nonjudgment; therefore, those with negative schemas learn new ways to process stressful events without experiencing symptoms of anxiety or depression.

Research Purpose

This study aims to examine whether trait mindfulness mitigates the negative impact childhood maltreatment has on symptoms of depression and anxiety in adulthood.

The results of this study will further clarify the impact of childhood maltreatment on college students' mental health and it will identify potential malleable protective factors that universities and clinics could target to decrease the detrimental effects of maltreatment.

This study answers the following research questions: a) does exposure to various types of childhood maltreatment and severity of childhood maltreatment predict increased symptoms of depression in college students, b) does exposure to various types of childhood maltreatment and severity of childhood maltreatment predict increased symptoms of anxiety in college students, c) does trait mindfulness predict anxiety and depression symptoms among college students, d) does trait mindfulness moderate the relationship between the severity and multiplicity of past childhood experiences of maltreatment and self-reported depression and anxiety symptoms in college students.

CHAPTER II: METHODOLOGY

Research Design

Participants

Data was collected via convenience sampling from students attending the University of Houston-Clear Lake (UHCL) through the SONA Participant Pool, advertisements placed on campus, and social media. Targeting recruitment also occurred through the Counseling Center at UHCL. The study was inclusive of all individuals between the ages of 17 to 50. Individuals over the age of fifty, under the age of eighteen without parental consent, and individuals who did not endorse experiences of childhood trauma were excluded from participating in the present study.

Data in this study was obtained from 392 students attending the University of Houston Clear Lake: freshman (9.2%), sophomores (10.5%), juniors (36.7%), seniors (24.5%), Master's (1.0%), and unspecified (18.1%) (see Table 1). The original sample size consisted of 409 participants; however, a total of 18 participants were removed. Participants were removed because they did not follow study directions and completed the survey multiple times, in which cases, the first responses from participants remained in the data set and subsequent responses were removed. Participants were also removed because they failed to complete the consent form and were excluded from the study and the remaining participants were excluded because their responses were "test surveys" in which researchers completed the study to ensure it worked online.

All procedures were approved by the University of Houston Clear Lake's Committee for the Protection of Human Subjects. Data was collected during the spring and fall semesters. Once the informed consent was viewed and signed electronically, participants were able to begin the study through Qualtrics. Participation was voluntary,

and respondents were able to refuse to answer any question. Upon completion of the survey, students were awarded extra credit for their selected psychology course. Since the study was conducted on a university campus, precautions were taken to ensure the privacy and confidentiality of the student's information. To protect the privacy of the participants, all survey data was collected using de-identified data (i.e., using confidential identification numbers that kept the investigators from gaining access to personal identifying information).

The sample analyzed consisted of the following: males represented 21.7% of the sample, females 74.2%, 2.3% of participants identified as non-binary, and the remaining 1.8% answered they identified as "other or unspecified" (see Table 1). White participants represented 40% of the sample, Hispanic/Latinx represented 31.9%, Black/African American represented 11%, Asian represented 9.4%, American Indian/Alaskan represented 2.6%, Middle Eastern represented 2.0% of the sample, and .8% identified as other and provided additional responses of being "biracial" or "Cajun" (see Table 1). 1.8% of participants preferred not to answer, endorsing multiracial, but did not provide additional qualitative information. The remaining selected "other" as their ethnicity of choice but did not provide additional information. Demographic information was obtained via self-report surveys, and it should be noted some students identified as bi- or multiracial. For ease of interpretation, students who identified themselves as bi or multiracial were classified according to the first descriptor listed. If a participant identified as white and Hispanic, and listed white as the first ethnicity, the participant was classified as white. The demographic information (gender, ethnicity, class ranking) were dummy coded for analysis.

Measures

The following measures were administered in a single self-report online survey, which took approximately 45 minutes to 1 hour to complete. Since the survey was a part of a larger research study, only survey questions relating to the present study will be discussed. The relevant survey questions consisted of items relating to childhood maltreatment, trait mindfulness, and symptoms of depression and anxiety. The following section presents these variable measures in more detail.

Childhood Maltreatment. Childhood maltreatment was measured by the Maltreatment and Abuse Chronology of Exposure Scale (MACE), (see Appendix). The MACE is a self-report retrospective measure that assesses the severity and multiplicity of childhood maltreatment. It consists of fifty-two items measuring exposure to maltreatment prior to the age of 18 (Teicher & Parigger, 2015). In this study, only the six maltreatment subscales were examined to identify the type and severity of exposure in each of the domains of abuse and neglect. It should be noted that the MACE typically includes 10 subscales but the four subscales not specific to parental maltreatment were disregarded in this study.

The scales assessed were Emotional Neglect (5 items; e.g., “My mother/father was emotionally unavailable”); Non-Verbal Emotional Abuse (6 items; e.g., “A parent locked you in a closet, basement, garage , etc.”); Parental Physical Maltreatment (6 items; e.g., “A parent intentionally pushed, pinched, slapped, kicked you, etc.”); Parental Verbal Abuse (4 items; e.g., “Said hurtful things, made you feel humiliated”); Physical Neglect (5 items; e.g., “You did not have enough to eat.”); and Sexual Abuse (7 items, e.g., “Parents touched or fondled you in a sexual way”). These scales were selected to be used in this study as they assess the type and severity of the core components of maltreatment experienced in childhood (i.e., physical abuse and neglect, sexual abuse, verbal abuse,

and emotional abuse and neglect). Upon completion of the MACE, two composite scores were created from these six subscales.

The first composite score consists of the MACE MULTI which indicates number of specific types of childhood maltreatment, ranging from 0 to 6 (Teicher & Parigger, 2015). Higher scores on the multiplicity scale (0 to 6) indicate the most frequently occurring types of maltreatment for each participant with 0 indicating no exposure to maltreatment and 6 indicating exposure to 6 different types of maltreatment (Teicher & Parigger, 2015). Importantly, the multiplicity scores were adapted to assess scores only across the six subscales being evaluated in this study (note: normally there are 10 subscales and 0 to 10 range). The second composite is the MACE SUM score which indicates the overall severity of exposure to maltreatment based upon the number of items endorsed within each subscale (Teicher & Parigger, 2015). More frequent positive item endorsements on each scale indicate more severe maltreatment within the specified domain.

The MACE has shown strong psychometric validity and high test-retest reliability among individuals across the lifespan ranging between $r = 0.5$ to 0.8 (Teicher & Parigger, 2015). In addition to strong psychometric properties, the MACE has been shown to account for more variance in psychiatric symptom ratings than the Child Trauma Questionnaire (CTQ) or the Adverse Childhood Experience Scale (ACE; Fosse, Skjelstad, Schalinski, Thekkumthala, Elbert, Aanondsen, Greger, & Jozefiak, 2020). The MACE has also demonstrated high convergent validity with CTQ, with coefficients falling between $r = 0.6$ to 0.9 (Schalinski et al., 2016; Teicher & Parigger, 2015). Importantly, as noted earlier, only 6 of the 10 subscales on the MACE were used in this present study. Therefore, the applicability of the above psychometric data to this study is limited and should be interpreted with caution.

Mindfulness Measure. Trait mindfulness was measured using the Mindful Attention Awareness Scale (MAAS), (see Appendix). The MAAS is the most widely cited and empirically validated measure of mindfulness (Medvedev, Siegert, Feng, Billington, Jang, & Krageloh, 2016). The MAAS is a self-report measure of 15 items that assess the presence or absence of mindfulness (Brown & Ryan, 2003). In this study, participants rated items on a 6-point Likert scale ranging from 1 (“almost never”) to 6 (“almost always”). The 15 items consist of statements such as, “I find it difficult to stay focused on what’s happening in the present”, and “I find myself doing things without paying attention” (Brown & Ryan, 2003). Individual items were summed and averaged to create a total score. Lower scores indicate a high level of attention and awareness (Brown & Ryan, 2003). To control for responses that may indicate social desirability, respondents were asked to report their actual daily experience as related to the measure’s items versus what they think their experience should be (Brown & Ryan, 2003; Cordon & Finney, 2008).

The MAAS shows good construct validity and reliability in multiple research studies (Kotze & Nel, 2016). The MAAS has strong a test-retest reliability, with scores after multiple administrations not being significantly different, $r = 0.81$ (Brown & Ryan, 2003). As indicated by the Cronbach’s α in multiple replication studies, the MAAS shows strong internal consistency reliability estimates, $\alpha = 0.60$ to 0.89 (MacKillop & Anderson, 2007; Osman, Lamis, Bagge, Freedenthal, & Barnes, 2016).).

Anxiety Measure. The Generalized Anxiety Disorder Scale – 7 (GAD-7) was used in this study to measure anxiety (Spitzer et al., 2006), (see Appendix C). The GAD-7 is a self-report measure consisting of seven questions developed to screen for the presence of Generalized Anxiety Disorder Spitzer et al., 2006). The total scores on the measure range from 0-21, with items being ranked on a 4-point Likert scale (0 = not at

all; 3 nearly every day) (Spitzer et al., 2006). Higher scores on the GAD-7 indicate more severe symptoms of Generalized Anxiety Disorder (Spitzer et al., 2006). The GAD-7 is identified as an appropriate measurement to assess anxiety among university students, individuals within the general population, and clinical samples (Lee & Kim, 2019; Kertz, Bigda-Peyton, Bjorgvinsson, 2012).

Studies show moderate to strong correlations to the Depression Anxiety and Stress Scale–21 and the Patient Health Questionnaire–9, indicating the presence of convergent validity, $r = 0.84-0.95$ (Lee & Kim, 2019). The GAD-7 demonstrates convergent validity with the Penn State Worry Questionnaire, $r = .83$ (Kertz, Bigda-Peyton, Bjorgvinsson, 2012). Additional findings suggest the GAD-7 has good internal consistency with worry, anxiety, depression, and stress, $\alpha = 0.46-0.83$ (Kertz, Bigda-Peyton, Bjorgvinsson, 2012).

Depression Measure. The Depression Anxiety Stress Scales–21 (DASS–21) was used in this study to measure depression (see Appendix D). The DASS–21 is a 21 question self-report questionnaire used to measure the distinctive symptoms of depression and anxiety (Lovibond & Lovibond, 1996). The DASS-21 was chosen for this study because it was standardized within the college student population and has similar factor structures across males and females (Camacho, Cordero, & Perkins, 2016). The measure is comprised of twenty-one questions (seven questions per scale) that were found to have 3-factor structure: depression, anxiety, and stress (Lovibond & Lovibond, 1996). The depression subscale was the only facet of this measure evaluated in this study. Recent studies provide evidence that the DASS-21 has item-scale convergence and discriminant validity with the PHQ-9 scales relating to depression (Sinclair, Siefert, & Slavin-Mulford, 2011). Cronbach’s alpha for the DASS-21 reveals acceptable and strong internal consistency ranging between $\alpha = .70-.90$ in clinical and nonclinical samples (Sinclair,

Siefert, & Slavin-Mulford, 2011; Osman, Wong, Bagge, Freedenthal, Gutierrez, & Lozano, 2012; Camacho, Cordero, & Perkins, 2016).

CHAPTER III: DATA ANALYSIS

A set of preliminary analyses were conducted prior to testing the research questions. Pearson correlations were conducted to check for multicollinearity and identify covariates based on demographic information. Any identified and significant covariates were controlled for in the regression models. To test the assumptions of the multiple regression, model residuals were plotted using a histogram to assess their distribution and a scatter plot was used to compare residuals to predictive values as a test for heteroscedastity.

Research Question 1: Maltreatment Multiplicity and Severity on Depression

To test whether the multiplicity of childhood maltreatment predicts depressive symptoms, a multiple regression model was used which controlled for covariates and included the DASS-21 depression subscale as the dependent variable and the MACE Multiplicity Scale (i.e., frequency) as the predictor variable. The following equation depicts this model:

$$Y_{Depression} = B_0X_0 + B_1X_{MACEMulti} + B_2X_{covariates} + e_i$$

To test whether the severity of childhood maltreatment predicts depressive symptoms, a multiple regression model was used which controlled for covariates and included the DASS-21 depression subscale as the dependent variable and the MACE Severity as the predictor variable. The following equation depicts this model:

$$Y_{Depression} = B_0X_0 + B_1X_{MACESev} + B_2X_{covariates} + e_i$$

Research Question 2: Maltreatment Multiplicity and Severity on Anxiety

To test whether the multiplicity of childhood maltreatment predicts anxiety symptoms, a multiple regression model was conducted which controlled for covariates

and included the GAD-7 as the dependent variable and the MACEMulti as the predictor variable. The equation of this model is listed below:

$$Y_{Anxiety} = B_0X_0 + B_1X_{MACEMulti} + B_2X_{covariates} + e_i$$

To test whether the severity of childhood maltreatment predicts anxiety symptoms, a multiple regression model was used which controlled for covariates and included the GAD-7 as the dependent variable and the MACE Severity as the predictor variable. The following equation depicts this model:

$$Y_{Anxiety} = B_0X_0 + B_1X_{MACESev} + B_2X_{covariates} + e_i$$

Research Question 3: Trait Mindfulness on Anxiety and Depression

To test whether trait mindfulness is associated with lower self-reported symptoms of anxiety a multiple regression model was used which controlled for covariates and included the GAD-7 as the dependent variable and the MAAS as the predictor variable. Please see the following equation:

$$Y_{Anxiety} = B_0X_0 + B_1X_{MAAS} + B_2X_{covariates} + e_i$$

To test whether trait mindfulness predicts rates of self-reported depression symptoms, a multiple regression model was used that controlled for covariates and included the DASS-21 depression subscale as the dependent variable and the MAAS as the predictor variable. The following equation represents this model:

$$Y_{Depression} = B_0X_0 + B_1X_{MAAS} + B_2X_{covariates} + e_i$$

Research Question 4: Trait Mindfulness as a Moderator

Moderating Effects of Trait Mindfulness on Depression. To test whether trait mindfulness moderates the relationship between self-reported depression symptoms and the frequency of childhood maltreatment, a multiple regression model was used that controlled for covariate and included the DASS-21 depression subscale as the dependent variable. The predictor variables included were the MACE Multiplicity Composite, the

MAAS, and an interaction term between the MACEMulti and MAAS. All predictor variables in the model were centered around their mean. Here is the equation for testing the moderating effects mindfulness on the relationship between maltreatment frequency and depression symptoms.:

$$Y_{Depression} = B_0X_0 + B_1X_{MACEMulti} + B_2X_{MAAS} + B_3X_{MACEMulti*MAAS} + B_4X_{covariates} + e_i$$

To test whether trait mindfulness moderates the relationship between self-reported depression symptoms and the severity of childhood maltreatment, a multiple regression model was used which controlled for covariates and included the DASS-21 as the dependent variable and the MACE Severity Composite, the MAAS, and an interaction term between these two variables as predictors. All predictor variables were centered around their mean. The following equation depicts this model:

$$Y_{Depression} = B_0X_0 + B_1X_{MACESev} + B_2X_{MAAS} + B_3X_{MACESev*MAAS} + B_4X_{covariates} + e_i$$

Moderating Effects of Trait Mindfulness on Anxiety. To test whether trait mindfulness moderates the relationship between self-reported anxiety symptoms and the frequency of childhood maltreatment, a multiple regression model was used which controlled for covariates and included the GAD-7 as the dependent variable and the MACE Multiplicity Composite, the MAAS, and an interaction term between these two variables as predictors. The following equation depicts this model:

$$Y_{Anxiety} = B_0X_0 + B_1X_{MACEMulti} + B_2X_{MAAS} + B_3X_{MACEMulti*MAAS} + B_4X_{covariates} + e_i$$

Finally, to test whether trait mindfulness moderates the relationship between self-reported anxiety symptoms and the severity of childhood maltreatment, a multiple regression model was used that controlled for covariates and included the GAD-7 as the dependent variable. The predictor variables included the MACE Severity Composite, the MAAS, and an interaction term between the MACE and MAAS. Here is the equation for this model:

$$Y_{Anxiety} = B_0X_0 + B_1X_{MACESev} + B_2X_{MAAS} + B_3X_{MACESev*MAAS} + B_4X_{covariates} + e_i$$

CHAPTER IV:

RESULTS

Preliminary Analysis

Table 2 provides the mean, median, standard deviation, range, skew, and kurtosis for each variable in this study. The variables of interest in the present study were identified as skewed if the scores were less than or equal to -1 or greater than or equal to 1.0. Of note, depression (DASS-21) was positively skewed (Skew = 1.0), and maltreatment multiplicity (MACE Multiplicity) was moderately negatively skewed (Skew = -1.32; See Table 2). Variables of interest were identified as kurtotic if the scores were less than or equal to -2 or greater than or equal to 2. Maltreatment multiplicity was highly kurtotic (Kurtosis = 4.07; see Table 2). All other variables (i.e., GAD-7, MAAS, Maltreatment Severity) had a normal distribution. There was no missing data on any variable.

One-way ANOVAs were used to identify demographic variables (i.e., Gender, University Classification, Ethnicity) that may serve as covariates. Results indicated significant differences between males ($M = 2.83$, $SD = 1.197$) and females ($M = 3.01$, $SD = 0.98$) on anxiety, $t(3, 388) = -3.75$, $p < .001$. No significant differences in gender were found for depression, $F(3, 388) = 0.83$, $p = 0.48$, trait mindfulness, $F(3, 383) = 1.82$, $p = 0.14$, maltreatment severity, $F(3, 383) = 1.41$, $p = .024$, or maltreatment multiplicity, $F(3, 383) = 1.07$, $p = 0.35$. Additionally, ethnicity was not significantly related to anxiety, $F(8, 383) = 1.592$, $p = 0.12$, depression, $F(8, 383) = 1.26$, $p = 0.26$, maltreatment severity, $F(8, 383) = 0.71$, $p = .68$, maltreatment multiplicity, $F(8, 383) = 1.14$, $p = .34$, or trait mindfulness, $F(8, 383) = 1.54$, $p = 0.14$. Similarly, university classifications status was not significantly related to anxiety, $F(5, 386) = 1.42$, $p = 0.21$, trait mindfulness $F(5, 386) = 0.66$, $p = 0.65$, maltreatment severity, $F(5, 386) = 1.18$, $p = 0.10$,

or maltreatment multiplicity, $F(5,386) = 1.07, p = 0.37$. However, the results indicated that university classification status was significantly related to depression, $F(5, 386) = 2.30, p = 0.04$. Pairwise comparisons indicated that depression was significantly higher for students self-identifying as unspecified university classification ($M = 8.70, SD = 8.82$) in comparison to students identifying as freshman ($M = 14.44, SD = 12.44$), $t(5, 386) = -2.65, p = .08$. Due to the results of the ANOVAs, models in the regression were conducted with and without controlling for demographic variables. However, including the covariates did not change the significance of the relationship between hypothesized predictor and moderating variables, thus results are reported based on models without the covariates. Further, no covariates were related to both the predictor variables and dependent variables, indicating less need to include demographics as covariates to test the hypotheses in this study.

Tests of assumptions of linearity, homoscedasticity, and residuals were conducted for each regression model. A visual inspection of the results of the Q-Q plot and histogram of residuals indicated the data was approaching normality. However, Shapiro Wilk's test of normality indicated that all of the regression models had non-normally distributed residuals, $p < .05$. Importantly, due to the large sample size of this study, the Central Limit Theorem indicates that the assumption of normality is not required to gain unbiased estimates and standard errors, so no adjustments were made to the data or the models in response to non-normality (Kwak & Kim, 2017). A Non-Constant Error Variance Test was conducted for each model to test for equal variance. The results indicated that regression models testing direct effects were homoscedastic, whereas models including moderators were heteroscedastic. To account for heteroscedasticity in the models with interaction terms, Huber-White robust standard error estimates were reported to minimize the risk of unequal variance that could bias standard errors. The

Durbin Watson Test was conducted to test the independence of each models' residuals. The Durbin Watson test indicated that all model residuals were independent. For all multiple regression models, Variance Inflation Factors indicated that predictor variables in each model were not multicollinear.

Research Question 1: Main Effects of Childhood Maltreatment on Depression

The first aim of this study was to test whether the multiplicity and severity of childhood maltreatment predicts depressive symptoms. The results of a linear regression analysis indicated there was a significant main effect for maltreatment multiplicity on depression $\beta = 1.82, t(1, 390) = 2.92, p = .004$. The results of an additional regression analysis indicated there was a significant main effect for maltreatment severity on depression $\beta = 0.53, t(1, 390) = 4.56, p < .001$.

Research Question 2: Main Effects of Childhood Maltreatment on Anxiety

The second aim of the study was to test whether the multiplicity and severity of childhood maltreatment predicts anxiety symptoms. The results of a linear regression analysis indicated there was a significant main effect for maltreatment multiplicity on anxiety $\beta = 1.09, t(1, 390) = 3.11, p = .002$. Similarly, the results of a linear regression analysis indicated there was a significant main effect for maltreatment severity on anxiety $\beta = .33, t(1, 390) = 5.18, p < .001$.

Research Question 3: Main Effects of Trait Mindfulness on Anxiety and Depression

The third aim of the study was to test whether trait mindfulness is associated with lower self-reported symptoms of anxiety and depression. The results of a linear regression analysis indicated there was a significant main effect for trait mindfulness on anxiety $\beta = 3.85, t(1, 390) = 17.40, p < .001$. Similarly, there was a significant main effect for trait mindfulness and depression $\beta = 5.94, t(1, 390) = 13.81, p < .001$.

Research Question 4: Moderation Analysis of Childhood Maltreatment, Trait Mindfulness, Anxiety, and Depression

The last aim of the study was to test if trait mindfulness moderated the relationship between childhood maltreatment multiplicity and severity on anxiety and depression symptoms in adulthood. The results of a multiple regression analysis that included an interaction term indicated that trait mindfulness did not significantly moderate the relationship between childhood maltreatment multiplicity and depression, $\beta = -0.25$, $t(3, 388) = -0.612$, $p = 0.54$ (see Table 3.3 for the entire model output). Similarly, results indicated that trait mindfulness did not significantly moderate the relationship between childhood maltreatment severity and depression, $\beta = -0.04$, $t(3, 388) = -0.37$, $p = 0.71$ (see Table 3.4). In addition, a multiple regression model indicated that trait mindfulness did not significantly moderate the relationship between maltreatment multiplicity and anxiety, $\beta = 0.23$, $t(3, 388) = 1.07$, $p = 0.29$ (see Table 3.1). Finally, a multiple regression analysis indicated that trait mindfulness did not significantly moderate the relationship between maltreatment severity and anxiety, $\beta = 0.03$, $t(3, 388) = 0.59$, $p = 0.56$ (see Table 3.2).

Power Analyses

An a-priori power analysis was conducted using G*Power 3.1 software to determine how many participants were needed to have an 80% chance of detecting a significant effect using a multiple regression model with three predictors (Faul et al., 2009). Research tends to show that maltreatment has a small ($r = .21$) to moderate effect ($r = .39$) on anxiety and depression (Scalinski, et al., 2016; Jones, Nurius, Song, & Fleming, 2018). Using the smallest effect size ($f^2 = .04$) with an alpha of .05, the a-priori power analyses indicated that 222 participants were needed to have an 80% chance of

detecting a significant effect. Given that the actual sample size was 392, this study had ample power to detect effects.

CHAPTER V:

DISCUSSION

Past studies have demonstrated the distal iatrogenic effects of childhood maltreatment on adults' mental health outcomes (e.g., increased rates of depression and anxiety; Agorastos, et al., 2014; Anda et al., 2006). In addition, researchers have found that higher levels of trait mindfulness are associated with improved mental health outcomes for adults (Shorey et al., 2014). However, there is a dearth of studies examining whether trait mindfulness buffers the negative effects of childhood maltreatment on mental health. This study was conducted to further understand the relationships between childhood maltreatment, depression and anxiety, and trait mindfulness among college students with histories of childhood maltreatment.

Maltreatment on Depression and Anxiety

It was hypothesized that higher levels of childhood maltreatment multiplicity and severity would be associated with higher self-reports of depressive and anxiety symptoms. The results indicated there was a significant and positive relationship between childhood maltreatment and depression symptoms in adulthood for both maltreatment multiplicity and severity. Specifically, participants who experienced more types of childhood maltreatment (multiplicity) tended to endorse more symptoms of depression when compared to participants exposed to fewer types of maltreatment. Similarly, participants who reported higher levels of maltreatment severity (degrees of maltreatment intensity) also endorsed more symptoms of depression when compared to participants who endorsed lower levels of maltreatment severity. These findings are consistent with past studies demonstrating the harmful distal effects of childhood maltreatment on the development of depressive symptoms in adulthood and college student populations (Buchanan, 2012; Nelson, Klumpparendt, Doebler, & Ehring, 2017).

Regarding anxiety, the results indicated there was a significant positive relationship between childhood maltreatment and anxiety symptoms in adulthood. Specifically, participants who experienced more types of childhood maltreatment (multiplicity) tended to endorse more symptoms of anxiety when compared to participants exposed to fewer types of maltreatment. Moreover, participants who reported higher levels of maltreatment severity (degrees of maltreatment intensity) also endorsed more symptoms of anxiety when compared to participants who endorsed lower levels of maltreatment severity. These findings are also consistent with past research demonstrating the harmful distal effects of childhood maltreatment on anxiety in adulthood (Buchanan, 2012; Wolff & Shi, 2012; Rehan, Antfolk, Johansson, Jern, & Santtila, 2017; Huh, Kim, Yu, & Chae, 2014)

The results of the present study provide notable implications for universities and the populations that they serve. First, the study reveals students with histories of childhood maltreatment are at risk for developing anxiety and depression. This information emphasizes the need for college campuses to utilize a preventative and tiered support system to adequately meet the needs of vulnerable students (Jimerson, Burns, VanDerHeyden, 2015). Universal (Tier 1) supports are implemented as an intervention aimed at preventing mental health concerns (Jimerson et al., 2015). Selective (Tier 2) supports are interventions delivered with the goal of alleviating the presence of mental health symptoms and remediating students already identifying as being at risk (Jimerson et al., 2015). Finally, Indicated or Intensive (Tier 3) supports are interventions implemented with the goals of providing treatment to individuals identified as having the highest level of mental health need or severity of symptoms (Jimerson et al., 2015).

In university settings, Tier 1 interventions are those aimed at preventing student mental health concerns, promoting academic achievement, and enhancing overall student

success (Arora et al., 2019). According to the Center Positive Behavioral Interventions and Supports (2022), universal supports for college students are events such as career fairs, mid-term and finals “destress events,” and campus wide policies that promote a safe campus. Selective interventions are targeted for students identified as at risk, such as students with histories of maltreatment. These interventions are often provided to students in small groups, most commonly led by a licensed mental health care worker or academic professional (Jimerson et al., 2015). On college campuses, selective interventions consist of social skills groups, interpersonal process groups, coping skills groups, psychoeducational groups, or mindfulness-based groups such as “Breathe and Move On (BAMO)” (Center on PBIS, 2022). Selective interventions may be most beneficial for students with histories of maltreatment that have not yet developed clinical mental health symptoms, but may appear to be struggling within a collegiate setting. Finally, indicated supports are those interventions aimed at helping students who have been identified as having significant mental health symptoms, such as the students in the present study with both significant histories of childhood maltreatment and elevated anxiety and depression symptoms. Indicated supports on university campuses may consist of interventions such as individual counseling from the university counseling center, with an emphasis on utilizing techniques such as mindfulness-based CBT, Koru mindfulness, and interpersonal process therapy (Smit & Stavoulaki, 2021; Ahmad, El Morr, Ritvo, Othman, & Moineddin, 2020). Past research indicates mindfulness and interpersonally based therapeutic frameworks help reduce significant anxious, depressive, and trauma-related mental health concerns among the college population (Smit & Stavoulaki, 2021; Ahmad, El Morr, Ritvo, Othman, & Moineddin, 2020).

Trait Mindfulness on Anxiety and Depression

Another aim of this study was to determine the influence of trait mindfulness on depression and anxiety symptoms. It was hypothesized higher self-reported levels of trait mindfulness would be associated with lower self-reported symptoms of anxiety and depression. The results from the current study revealed as levels of trait mindfulness increased (note: lower scores on the trait mindfulness measure used in this study indicated higher levels of trait mindfulness), self-reports of anxiety and depression decreased. These results are similar to past research which has identified trait mindfulness as being associated with reductions in self-reported symptoms of anxiety and depression (Coffey & Hartman, 2006; Shorey et al., 2015).

The present results highlight the importance of mindfulness-based techniques as potential effective interventions for individuals with anxiety and depression in a college setting; however, more intervention studies are required in order to confirm mindfulness-based intervention as effective for this clinical population (Shorey, Brasfield, Anderson, & Stuart, 2015). In accordance with the prevention model and multi-tiered systems of support, university mental health services may provide students with mindfulness stress-reduction techniques such as mindful breathing breaks, focus and awareness mindfulness tasks, mindful eating, guided body scans, and object mediation (Deyo, Wilson, & Koopman, 2009; Domitrovich, Bradshaw, Greenberg, Embry, Poduska, & Ialongo, 2010). These mindfulness techniques could be delivered as universal, secondary, or indicated interventions as these strategies are effective in the prevention and treatment of mental health concerns depending upon the service delivery context and intensity (Langer, Medeiros, Valdes-Sanchez, Brito, Steinebach, Cid-Parra, Magni, & Krause, 2020). At least one study has found that the effectiveness of mindfulness-based interventions in schools and universities is dependent upon the duration of mindfulness

training, mindfulness skills taught (i.e. deep breathing, progressive muscle relaxation), and the knowledge of the instructor (Langer et al., 2020).

While the current results indicate lower trait mindfulness is associated with increased anxiety and depression, more replication studies will be needed to validate the findings in the present study. Moreover, as trait mindfulness has been identified as a malleable factor associated with improving mental health symptoms, (i.e., negative rumination, excessive worry), Deyo and colleagues (2009) recommend intervention studies may be conducted among individuals with histories of childhood maltreatment with comorbid anxiety and depression diagnoses to more fully understand the influence of trait mindfulness on current mental health symptomology.

Moderation: Trait Mindfulness, Anxiety, and Depression

The final aim of this study was to test whether trait mindfulness reduces the distal effects of childhood maltreatment on depression and anxiety. It was hypothesized that higher levels of trait mindfulness would weaken the relationship between experiences of childhood maltreatment and symptoms of depression and anxiety. However, the results indicated there was not a significant influence of trait mindfulness on the relationship between childhood maltreatment multiplicity and severity on self-reports of anxiety and depression symptoms in college students. Though these findings do not support the original hypothesis, they are somewhat aligned with findings from Parsons and colleagues (2017), which indicate that trait mindfulness may not aid in the reduction of symptoms for individuals with severe mental health symptoms. Instead, Parsons and colleagues (2017) emphasized that these individuals may require specialized and time-intensive mindfulness and awareness training to see an alleviation of symptoms. Accordingly, participants in this study who had more severe experiences of maltreatment likely also had higher levels of depression and anxiety symptoms, thus potentially falling

in the more severe range. Recent literature supports mindfulness as a disorder-specific treatment instead of a universally accepted intervention for all mental health disorders and clinical populations, such as individuals with dissociative disorders, severe post-traumatic stress, anxiety, depression, or those with episodes of depersonalization as mindfulness may increase the severity and occurrence of specific symptoms (Britton, 2019). Research shows in such populations, mindfulness-based interventions may increase the prevalence of negative attentional biases, out-of-body experiences, pain/physical reactivity, flashbacks, and emotional blunting (Britton, 2019).

These findings suggest while mindfulness-based interventions help alleviate the negative symptoms associated with many mental health disorders, it is vital clinicians working in collegiate mental health settings be aware of populations in which mindfulness interventions are contra-indicated (Britton, 2019). The importance of this information illuminates the need for clinician competency in research and intervention when providing services to a collegiate population, specifically those with histories of maltreatment (Locke, Bieschke, Castonguay, & Hayes, 2012). Moreover, other studies emphasize the need for specialized training in mindfulness in order for mindfulness-based techniques to be effective in mental health symptom management (Carsley, Khoury, & Heath, 2018). University settings should be aware when utilizing mindfulness interventions for their students that the individuals providing services be trained in mindfulness interventions and the implementation of these skills both broadly (universal) and more specifically (selective and indicated) (Carsley, Khoury, & Heath, 2018).

Research Strengths and Limitations

This current study presents several notable strengths. First and foremost, the information gathered from this study sought to foster better understanding for an underserved population: collegiate students with a history of childhood maltreatment and abuse. Results from this study highlighted the importance of understanding the influence a history of maltreatment has on mental health diagnoses and symptomology in adulthood, especially among students attending college. The data collected from this study also validated past research which indicates individuals with histories of maltreatment, particularly those enrolled in college, self-report symptoms relating to anxiety and depression. Furthermore, this was the first study to date which examined the potential for moderating relationships between trait mindfulness, childhood maltreatment severity and multiplicity, and mental health symptoms among a collegiate population.

While there are many strengths to this research, it should be noted the current study has some limitations. First, the study used convenience sampling; therefore, the results found may not be representative of the overall U.S population and cannot be generalized to other populations or communities outside of a college setting. Relatedly, since all participants were actively enrolled in college, they may have displayed higher levels of resilience and perseverance as compared to other clinical populations, which may have confounded study results (Maples, Park, Nolen, & Rosen, 2014). In addition, participants were not asked to disclose past or current psychological therapy experiences; therefore, it is unknown the impact therapy may have had on those enrolled in the study.

This study was also limited because data was collected via self-report retrospective measures. In relying on self-report measures, some participants may have provided data that is inaccurate or may have been influenced by the amount of time that elapsed between the traumatic events and survey completion. Participants may have also

over reported or underreported the severity of childhood maltreatment, which previous research shows individuals with histories of trauma often under-report prior traumatic experiences due to fear surrounding judgment, potential legal matters, and shame (Finkelhor, & Dziuba-Leatherman, 1993; Schmidt, Narayan, Atzl, Rivera, & Lieberman, 2020; Anda, Felitti, Bremner, Walker, Whitfield, Perry, Dube, & Giles, 2006).

Moreover, since the survey was optional and completed for additional course credit, students may not have been attending to the information presented within the survey questions or may not have been intentional or forthcoming in their responses to items, as research shows individuals with histories of childhood maltreatment may overreport or underreport on questionnaires pertaining to their past experiences (Hardt & Rutter, 2004).

Finally, the construct validity of the MAAS (i.e., trait mindfulness scale) is still under evaluation. According to Van Dam, Earleywine, and Borders (2010), the MAAS does not appropriately differentiate between attention and awareness, as these are two distinct components of mindfulness. Additionally, some research suggests the MAAS measures underlying traits such as neuroticism and negative affect better than it measures mindfulness (Van Dam, Earleywine, & Borders 2010). Another limitation of the MAAS is that it does not have a cut score; therefore, it has significant weaknesses when addressing classification accuracies. Individuals whose MAAS scores are high are considered more mindful; however, there are no specifications for what differentiates high scores from low scores. Given this weakness, it is difficult to specify an individual's true level of mindful attention and awareness.

Future Research

Future research should replicate this study with more diverse participants from varying age groups (e.g., younger and older participants), socioeconomic backgrounds,

and ethnicities as the present study only evaluated individuals within a collegiate setting. Furthermore, the participants from the present study were predominately female and self-identified as White or Hispanic/Latino/Latina. Furthermore, future research could continue to examine the relationship between trait mindfulness and other mental health conditions among a collegiate population, as the current study only evaluated the influence of trait mindfulness on depression and anxiety.

Moreover, future research could continue to examine the effects of mindfulness-based interventions in improving depression and anxiety symptoms for people with histories of childhood maltreatment, such as interventions focusing on open monitoring, body scans, focusing awareness, loving kindness, and self-compassion breaks (Tang & Braver, 2020). Additionally, researchers could evaluate which mindfulness-based techniques are most appropriate as universal, selective, or indicated interventions within collegiate settings. Moreover, researchers could evaluate feasible and acceptable ways to disseminate these skills and techniques to students, especially those with histories of maltreatment at risk of developing significant mental health disorders. Future research studies may also investigate how past or current psychological therapy, specifically mindfulness-based therapy (TF-CBT, ACT, MCBT), may counteract the influence of childhood maltreatment on adult mental health. These replication and intervention studies are vital to collegiate campuses as current research shows individual mindfulness therapy significantly improves the mental health of university students (Smit & Stavroulaki, 2021). Finally, future research may overcome the limitation of under/over reporting by obtaining data from collateral informants to obtain the most accurate data regarding an individual's trauma history (Finkelhor, & Dzuiba-Leatherman, 1993; Schmidt, et al., 2020; Anda et al., 2006).

Conclusion

In conclusion, this study provided additional evidence of the negative distal correlates of experiences of childhood maltreatment on depression and anxiety symptoms in college students. In addition, this study replicated findings demonstrating that trait mindfulness is associated with lower symptoms of anxiety and depression. Unfortunately, the study did not find support for trait mindfulness as a protective factor against the iatrogenic effects of childhood maltreatment on college students' anxiety and depression symptoms. Ultimately, this study should serve as a catalyst for future research aimed at identifying malleable protective factors that buffer against the negative effects of childhood maltreatment.

REFERENCES

- Agorastos, A., Pittman, J., Angkaw, A., Nievergelt, C., Parisi, S., Barkauskas, D., & Baker, D. (2014). The cumulative effect of childhood trauma on adult mental and physical health: results from the Marine Resiliency Study. *European Neuropsychopharmacology*, 24, S619–S620. [https://doi.org/10.1016/S0924-977X\(14\)70993-9](https://doi.org/10.1016/S0924-977X(14)70993-9)
- Ahmad, El Morr, C., Ritvo, P., Othman, N., & Moineddin, R. (2020). An eight-week, web-based mindfulness virtual community intervention for students' mental health: Randomized controlled trial. *JMIR Mental Health*, 7(2), e15520–e15520. <https://doi.org/10.2196/15520>.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174–186. <https://doi.org/10.1007/s00406-005-0624-4>
- American Psychological Association. (2013). College students' mental health is a growing concern, survey finds. *Monitor on Psychology*, 44(6). <https://www.apa.org/monitor/2013/06/college-students>
- Arnekrans, A. K., Calmes, S. A., Laux, J. M., Roseman, C. P., Piazza, N. J., Reynolds, J. L., Harmening, D. and Scott, H. L. (2018). College students' experiences of childhood developmental traumatic stress: resilience, first-year academic performance, and substance use. *Journal of College Counseling*, 21,

- <https://doi.org/10.1002/jocc.12083> Arnett, J. J. (2007) Emerging adulthood: What is it and what is it good for? *Journal of Society for Research in Child Development*, (2007). <https://doi.org/10.1111/j.1750-8606.2007.00016.x>
- Arora, Collins, T. A., Dart, E. H., Hernández, S., Fetterman, H., & Doll, B. (2019). Multi-tiered systems of support for school-based mental health: A systematic review of depression interventions. *School Mental Health*, 11(2), 240–264. <https://doi.org/10.1007/s12310-019-09314-4>
- Arslan, G. (2017). Psychological maltreatment, forgiveness, mindfulness, and internet addiction among young adults: A study of mediation effect. *Computers in Human Behavior*, 72. <http://search.proquest.com/docview/1932091117>
- Beard, C., & Björgvinsson, T. (2014). Beyond generalized anxiety disorder: Psychometric properties of the GAD-7 in a heterogeneous psychiatric sample. *Journal of Anxiety Disorders*, 28(6), 547–552. <https://doi.org/10.1016/j.janxdis.2014.06.002>
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical psychology: Science and Practice*, 11(3), 230-241. <https://doi.org/10.1093/clipsy.bph077>
- Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S. M., & Olfson, M. (2008). Mental health of college students and their non-college-attending peers: results from the National Epidemiologic Study on Alcohol and Related Conditions. *Archives of General Psychiatry*, 65(12), 1429–1437. <https://doi.org/10.1001/archpsyc.65.12.1429>

- Boyd, J. E., Lanius, R. A., & McKinnon, M. C. (2017). Mindfulness-based treatments for posttraumatic stress disorder: A review of the treatment literature and neurobiological evidence, *Journal of Psychiatric Neuroscience*, 43, (1), 7-25.
- Brett, E., Espeleta, H., Lopez, S., Leavens, E., & Leffingwell, T. (2018). Mindfulness as a mediator of the association between adverse childhood experiences and alcohol use and consequences. *Addictive Behaviors*, 84, 92–98.
<https://doi.org/10.1016/j.addbeh.2018.04.002>
- Briere, J., & Jordan, C. E. (2009). Childhood maltreatment, intervening variables, and adult psychological difficulties in women: An overview. *Trauma, Violence, & Abuse*, 10(4), 375–388. <https://doi.org/10.1177/1524838009339757>
- Britton W. B. (2019). Can mindfulness be too much of a good thing? The value of a middle way. *Current Opinion in Psychology*, 28, 159–165.
<https://doi.org/10.1016/j.copsyc.2018.12.011>
- Brooks, P., Girgenti, A., & Mills, M. (2009). Sleep patterns and symptoms of depression in college students. *College Student Journal*, 43(2), 464–472.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848. doi:10.1037/0022-3514.84.4.822
- Buchanan, J. (2012). Prevention of depression in the college student population: A Review of the literature. *Archives of Psychiatric Nursing*, 26(1), 21–42.
<https://doi.org/10.1016/j.apnu.2011.03.003>

- Camacho, Á., Cordero, E., & Perkins, T. (2016). Psychometric properties of the DASS-21 among latina/o college students by the us-mexico border. *Journal of Immigrant and Minority Health*, 18(5), 1017–1023. <https://doi.org/10.1007/s10903-016-0415-1>
- Carsley, Dana & Khoury, Bassam & Heath, Nancy. (2018). Effectiveness of mindfulness interventions for mental health in schools: A comprehensive meta-analysis. *Mindfulness*, 9, 10. <https://doi.org/10.1007/s12671-017-0839-2>
- Center on PBIS (2022). Positive Behavioral Interventions & Supports [Website]. www.pbis.org.
- Chi, X., Bo, A., Liu, T., Zhang, P., & Chi, I. (2018). Effects of mindfulness-based stress reduction on depression in adolescents and young adults: A systematic review and meta-analysis. *Frontiers in Psychology*, 9, 1034. <https://doi.org/10.3389/fpsyg.2018.01034>
- Child Welfare Information Gateway. (2019). *Definitions of child abuse and neglect*. Washington, DC: U.S. Department of Health and Human Services, Children's Bureau.
- Cody, M. W., & Teachman, B. A. (2010). Post-event processing and memory bias for performance feedback in social anxiety. *Journal of Anxiety Disorders*, 24(5), 468–479. <https://doi.org/10.1016/j.janxdis.2010.03.003>
- Coffey, K. A., & Hartman, M. (2008). Mechanisms of action in the inverse relationship between mindfulness and psychological distress. *Complementary Health Practice Review*, 13, 79 –91.

- Cordon, S. L., & Finney, S. J. (2008). Measurement invariance of the mindful attention awareness scale across adult attachment style. *Measurement and Evaluation in Counseling and Development*, 40(4), 228-245.
doi:10.1080/07481756.2008.11909817
- Crouch, E., Strompolis, M., Radcliff, E., & Srivastav, A. (2018). Examining exposure to adverse childhood experiences and later outcomes of poor physical and mental health among South Carolina adults. *Children and Youth Services Review*, 84, 193–197. <https://doi.org/10.1016/j.childyouth.2017.11.031>
- Cuijpers, P., Cristea, I., Ebert, D., Koot, H., Auerbach, R., Bruffaerts, R., & Kessler, R. (2016). Psychological treatment of depression in college students: A metanalysis. *Depression and Anxiety*, 33(5), 400-415.
- Daly, B., Hildenbrand, A., Turner, E., Berkowitz, S., & Tarazi, R. (2017). Executive functioning among college students with and without history of childhood maltreatment. *Journal of Aggression, Maltreatment & Trauma*, 26(7), 717–735. <https://doi.org/10.1080/10926771.2017.1317685>
- Del Giudice, M., Ellis, B., Shirtcliff, E., & Del Giudice, M. (2011). The Adaptive calibration model of stress responsivity. *Neuroscience and Biobehavioral Reviews*, 35(7), 1562–1592. <https://doi.org/10.1016/j.neubiorev.2010.11.007>
- Del Giudice, M., Hinnant, J. B., Ellis, B. J., & El-Sheikh, M. (2012). Adaptive patterns of stress responsivity: A preliminary investigation. *Developmental Psychology*, 48(3), 775–790. <https://doi.org/10.1037/a0026519>
- Dempster, F. N. (1992). The rise and fall of the inhibitory mechanism: Toward a unified theory of cognitive

- development and aging. *Developmental Review*, 12, (1), 45–75.
[https://doi.org/10.1016/0273-2297\(92\)90003-K](https://doi.org/10.1016/0273-2297(92)90003-K) Deyo, M., Wilson, K. A., Ong, J., & Koopman, C. (2009). Mindfulness and rumination: does mindfulness training lead to reductions in the ruminative thinking associated with depression? *Explore (New York, N.Y.)*, 5(5), 265–271. <https://doi.org/10.1016/j.explore.2009.06.005>
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.).
<https://doi.org/10.1176/appi.books.9780890425596> Domitrovich, C. E., Bradshaw, C. P., Greenberg, M. T., Embry, D., Poduska, J. M., & Ialongo, N. S. (2010). Integrated models of school-based prevention: Logic and theory. *Psychology in the schools*, 47(1), 71–88. <https://doi.org/10.1002/pits.20452>
- Dunning, D.L., Griffiths, K., Kuyken, W., Crane, C., Foulkes, L., Parker, J., & Dalgleish, T. (2019). Research review: The effects of mindfulness-based interventions on cognition and mental health in children and adolescents – a meta-analysis of randomized controlled trials. *The Journal of Child Psychology and Psychiatry*, 60, (3), 244-258.
- Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry*, 77(4), 534-542
- Ekinci, S., & Kandemir, H. (2014). Childhood trauma in the lives of substance dependent patients: The relationship between depression, anxiety, and self-esteem. *Journal of Psychiatry*, 69, 249-235.

- Grasgreen, A. (2011). More patients, less pay. Retrieved from:
<https://www.insidehighered.com/news/2011/04/05/more-patients-less-pay>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Perma-Nente, K. (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 Preventive Medicine*, 14(4).
- Finkelhor, D., & Dzuiba-Leatherman, J. (1994). Children as victims of violence: a national survey. *Pediatrics*, 94(4 Pt 1), 413–420.
- Follette, V., Palm, K. M., & Pearson, A. N. (2006). Mindfulness and trauma: Implications for treatment. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 24, 45– 61. doi:10.1007/s10942-006- 0025-2
- Fortuna, L. R., Porche, M. V., & Padilla, A. (2018). A treatment development study of a cognitive and mindfulness-based therapy for adolescents with co-occurring post-traumatic stress and substance use disorder. *Psychology and Psychotherapy: Theory, Research, and Practice*, 91, 42-62.
- Funder, D. C., & Ozer, D. J. (2019). Evaluating effect size in psychological research: Sense and nonsense. *Advances in Methods and Practices in Psychological Science*, 2(2), 156–168. <https://doi.org/10.1177/2515245919847202>

- Friedman, H. (2010). Is Buddhism a psychology? Commentary on romanticism in “mindfulness in psychology.” *The Humanistic Psychologist*, 38(2), 184–189.
<https://doi.org/10.1080/08873267.2010.485899>
- Goh, H. E., Marais, I., & Ireland, M. J. (2017). A rasch model analysis of the mindful attention awareness scale. *Assessment*, 24(3), 387-398.
doi:10.1177/1073191115607043
- Gojani, P., Masjedi, M., Khaleghipour, S., & Behzadi, E. (2017). Effects of the schema therapy and mindfulness on the maladaptive schemas hold by the psoriasis patients with the psychopathology symptoms. *Advanced Biomedical Research*, 6(1), 4–4. <https://doi.org/10.4103/2277-9175.190988>
- Grasso, D., Dierkhising, C., Branson, C., Ford, J., & Lee, R. (2016). Developmental patterns of adverse childhood experiences and current symptoms and impairment in youth referred for trauma-specific services. *Journal of Abnormal Child Psychology*, 44(5), 871–886. <https://doi.org/10.1007/s10802-015-0086-8>
- Hardt J, & Rutter, M (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology Psychiatry*, 45,260–273.
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78 (2), 169.

- Hooven, C., Nurius, P., Logan-Greene, P., & Thompson, E. (2012). Childhood violence exposure: Cumulative and specific effects on adult mental health. *Journal of Family Violence*, 27, (6), 511–522. <https://doi.org/10.1007/s10896-012-9438-0>
- Hsiao, Y. Y., Tofighi, D., Kruger, E. S., Lee Van Horn, M., MacKinnon, D. P., & Witkiewitz, K. (2019). The (lack of) replication of self-reported mindfulness as a mechanism of change in mindfulness-based relapse prevention for substance use disorders. *Mindfulness*, 10(4), 724–736. <https://doi.org/10.1007/s12671-018-1023-z>
- Huh, H. J., Kim, S. Y., Yu, J. J., Chae, J. H. (2014). Childhood trauma and adult interpersonal relationship problems in patients with depression and anxiety disorders, *Annals of General Psychiatry*, 13, (26), 1-13.
- Jager, J., Putnick, D. L., & Bornstein, M. H. (2017). II. More than just convenient: The scientific merits of homogeneous convenience samples. *Monographs of the Society for Research in Child Development*, 82(2), 13–30. <https://doi.org/10.1111/mono.12296>
- Jimerson, S. R., Burns, M. K., & VanDerHeyden, A. M. (Eds.). (2015). Handbook of response to intervention: The science and practice of multi-tiered systems of support. New York: Springer.
- Jones, T., Nurius, P., Song, C., & Fleming, C. (2018). Modeling life course pathways from adverse childhood experiences to adult mental health. *Child Abuse & Neglect*, 80, 32–40. <https://doi.org/10.1016/j.chiabu.2018.03.005>

- Kabat-Zinn, J. (1994). *Wherever you go, there you are: mindfulness meditation in everyday life*. New York: Hyperion.
- Kananen, L., Surakka, I., Pirkola, S., Suvisaari, J., Lönnqvist, J., Peltonen, L., Ripatti, S., Hovatta, I., & Mitchell, A. (2010). Childhood adversities are associated with shorter telomere length at adult age both in individuals with an anxiety disorder and controls, *PLoS ONE*, 5(5), e10826.
<https://doi.org/10.1371/journal.pone.0010826>
- Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: a review of empirical studies. *Clinical psychology review*, 31(6), 1041–1056. <https://doi.org/10.1016/j.cpr.2011.04.006>
- Kertz, S., Bigda-Peyton, J., & Bjorgvinsson, T. (2013). Validity of the generalized anxiety disorder-7 Scale in an acute psychiatric sample. *Clinical Psychology & Psychotherapy*, 20(5), 456–464. <https://doi.org/10.1002/cpp.1802>
- Keyes, K. M., Eaton, N. R., Krueger, R. F., McLaughlin, K. A., Wall, M. M., Grant, B. F., & Hasin, D. S. (2012). Childhood maltreatment and the structure of common psychiatric disorders. *The British Journal of Psychiatry: The Journal of Mental Science*, 200(2), 107–115. <https://doi.org/10.1192/bjp.bp.111.093062>
- Kiken, L. G., Garland, E. L., Bluth, K., Palsson, O. S., & Gaylord, S. A. (2015). From a state to a trait: Trajectories of state mindfulness in meditation during intervention predict changes in trait mindfulness. *Personality and individual differences*, 81, 41–46. <https://doi.org/10.1016/j.paid.2014.12.044>

- Klineberg, E., Biddle, L., Donovan, J., & Gunnell, D. (2011). Symptom recognition and help seeking for depression in young adults: a vignette study. *Social Psychiatry and Psychiatric Epidemiology*, 46(6), 495–505. <https://doi.org/10.1007/s00127-010-0214-2>
- Kotze, M., & Nel, P. (2016). The psychometric properties of the mindful attention awareness scale (MAAS) and freiburg mindfulness inventory (FMI) as measures of mindfulness and their relationship with burnout and work engagement : Original research. *SA Journal of Industrial Psychology*, 42(1), 1-11.
- Kraus, M. W., Chen, S., & Keltner, D. (2011). The power to be me: Power elevates self-concept consistency and authenticity. *Journal of Experimental Social Psychology*, 47, 974-980.
- Kropp, Alexander & Sedlmeier, Peter. (2019). What makes mindfulness-based interventions effective? An examination of common components. *Mindfulness*, 10. <https://doi.org/10.1007/s12671-019-01167-x>
- Kuo, J. R., Goldin, P. R., Werner, K., Heimberg, R. G., & Gross, J. J. (2011). Childhood trauma and current psychological functioning in adults with social anxiety disorder. *Journal of Anxiety Disorders*, 25, 467-473.
- Kwak, S. G., & Kim, J. H. (2017). Central limit theorem: the cornerstone of modern statistics. *Korean Journal of Anesthesiology*, 70(2), 144–156.
<https://doi.org/10.4097/kjae.2017.70.2.144>
- Langer, Á. I., Medeiros, S., Valdés-Sánchez, N., Brito, R., Steinebach, C., Cid-Parra, C., Magni, A., & Krause, M. (2020). A qualitative study of a mindfulness-based

- intervention in educational contexts in chile: An approach based on adolescents' voices. *International Journal of Environmental Research and Public Health*, 17(18), 6927. <https://doi.org/10.3390/ijerph17186927>
- Lau, M.A., Bishop, S.R., Segal, Z.V., Buis, T., Anderson, N.D., Carlson, L., Shapiro, S., Carmody, J., Abbey, S. and Devins, G. (2006), The toronto mindfulness scale: Development and validation. *Journal of Clinical Psychology*, 62: 1445-1467. <https://doi.org/10.1002/jclp.20326>
- Lee, B., & Kim, Y. (2019). The psychometric properties of the generalized anxiety disorder scale (GAD-7) among korean university students. *Psychiatry and Clinical Psychopharmacology*, 29(4), 864–871. <https://doi.org/10.1080/24750573.2019.1691320>
- Legate, N., DeHaan C., Weinstein, N., Ryan, R. M. (2013). Hurting you hurts me too: The psychological costs of complying with ostracism. *Psychological Science*, 24, (4), 583-588.
- Lin, C. (2015). Gratitude and depression in young adults: The mediating role of self-esteem and well-being. *Personality and Individual Differences*, 87, 30–34. <https://doi.org/10.1016/j.paid.2015.07.017>
- Lindsey, C. (2014). Trait anxiety in college students: The role of the approval seeking schema and separation individuation. *College Student Journal*, 48(3), 407–418.
- Ljungberg, A., Denhov, A., & Topor, A. (2015). The art of helpful relationships with professionals: A meta-ethnography of the perspective of persons with severe mental illness, *Psychiatry Q*, 86, 471-495.

- Locke, B. D., Bieschke, K. J., Castonguay, L. G., & Hayes, J. A. (2012). The center for collegiate mental health: studying college student mental health through an innovative research infrastructure that brings science and practice together. *Harvard Review of Psychiatry*, 20(4), 233–245.
<https://doi.org/10.3109/10673229.2012.712837>
- Lovibond, S. H., & Lovibond, P. F. (1996). Manual for the depression anxiety stress scales. Psychology Foundation of Australia.
- Lyvers, M., Makin, C., Toms, E., Thorberg, F. A., & Samios, C. (2014). Trait mindfulness in relation to emotional self-regulation and executive function. *Mindfulness*, 5(6), 619-625. <https://doi.org/10.1007/s12671-013-0213-y>
- MacKillop, J., & Anderson, E. J. (2007). Further psychometric validation of the mindful attention awareness scale (MAAS). *Journal of Psychopathology and Behavioral Assessment*, 29(4), 289-293. doi:10.1007/s10862-007-9045-1
- Madon, S., Willard, J., Guyll, M., & Scherr, K.C. (2011). Self-fulfilling prophecies: Mechanisms, power, and links to social problems. *Social and Personality Psychology*, 5(8), 578-590.
- Maples, L. A., Park, S. S., Nolen, J. P., & Rosén, L. A. (2014). Resilience to childhood abuse and neglect in college students. *Journal of Aggression, Maltreatment & Trauma*, 23(10), 1001–1019. <https://doi.org/10.1080/10926771.2014.964435>
- Mark, C. A., Poltavski, D. V., Petros, T., & King, A. (2019). Differential executive functioning in young adulthood as a function of experienced child abuse. *International Journal of Psychophysiology*, 135, 126-135.

- Marshall, D. F., Passarotti, A. M., Ryan, K. A., Kamali, M., Saunders, E. F. H., Pester, B., McInnis, M. G., Langenecker, S. A. (2016). Deficient inhibitory control as an outcome of childhood trauma. *Psychiatry Research*, 235, 7-12.
- McCrory, E., Puetz, V., Maguire, E., Mechelli, A., Palmer, A., Gerin, M., Viding, E. (2017). Autobiographical memory: A candidate latent vulnerability mechanism for psychiatric disorder following childhood maltreatment. *British Journal of Psychiatry*, 211(4), 216-222. doi:10.1192/bjp.bp.117.201798
- Medvedev, O. N., Siegert, R. J., Feng, X. J., Billington, D. R., Jang, J. Y., & Krägeloh, C. U. (2016). Measuring trait mindfulness: How to improve the precision of the mindful attention awareness scale using a rasch model. *Mindfulness*, 7(2), 384-395. doi:10.1007/s12671-015-0454-z
- Mendelson, T., Tandon, D. S., O'Brennan, L., Leaf, P. J., Lalongo, S. N., (2015). Brief report: Moving prevention into schools: The impact of a trauma-informed school-based intervention. *Journal of Adolescence*, 43, 142-147. doi: 10.1016/j.adolescence.2015.05.017
- Merians, A., Baker, M., Frazier, P., & Lust, K. (2019). Outcomes related to adverse childhood experiences in college students: Comparing latent class analysis and cumulative risk. *Child Abuse & Neglect*, 87, 51–64.
<https://doi.org/10.1016/j.chiabu.2018.07.020>
- Mittal, C., Griskevicius V., Simpson, J.A., Sung, S., & Young, E.S. (2015). Cognitive adaptations to stressful environments: When childhood adversity enhances adult

- executive function. *Journal of Personality and Social Psychology*, 109 (4), 604-621. DOI: 10.1037/pspi0000028
- Mohr, D., & Rosén, L. A. (2017). The impact of protective factors on posttraumatic growth for college student survivors of childhood maltreatment. *Journal of Aggression, Maltreatment & Trauma*, 26(7), 756–771.
<https://doi.org/10.1080/10926771.2017.1304478>
- Norman, G. J., Hawkley, L., Ball, A., Bernston, G. G., & Cacioppo, J. T. (2014). Perceived social isolation moderates the relationship between early childhood trauma and pulse pressure in older adults. *International Journal of Psychopathology*, 88, 334-338.
<https://doi.org/10.1080/10926771.2017.1304478>
- Nelson, J., Klumpp, A., Doebler, P., & Ehring, T. (2017). Childhood maltreatment and characteristics of adult depression: Meta-analysis. *British Journal of Psychiatry*, 210(2), 96-104. doi:10.1192/bjp.bp.115.180752
- Osman, A., Wong, J., Bagge, C., Freedenthal, S., Gutierrez, P., & Lozano, G. (2012). The depression anxiety stress scales-21 (DASS-21): Further examination of dimensions, scale reliability, and correlates. *Journal of Clinical Psychology*, 68(12), 1322–1338. <https://doi.org/10.1002/jclp.21908>
- Parsons, E., Luebke, A., & Clerkin, E. (2017). Testing the relationship between social anxiety schemas, mindfulness facets, and state and trait social anxiety symptoms. *Mindfulness*, 8(6), 1634–1643. <https://doi.org/10.1007/s12671-017-0738-6>
- Parsons, C., Crane, R., Parsons, L., Overby, N., Fjorback, L., & Kuyken, W. (2017). Home practice in mindfulness-based cognitive therapy and mindfulness-based stress reduction: A systematic review and meta-analysis of participants' mindfulness practice and its

- association with outcomes. *Behaviour Research and Therapy*, 95, 29-41,
<https://doi.org/10.1016/j.brat.2017.05.004>.
- Paul, N. A., Stanton, S. J., Greeson, J. M., Smoski, M. J., & Wang, L. (2013).
 Psychological and neural mechanisms of trait mindfulness in reducing depression
 vulnerability. *Social Cognitive and Affective Neuroscience*, 8(1), 56–64.
<https://doi.org/10.1093/scan/nss070>
- Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College Students:
 mental health problems and treatment considerations. *Academic Psychiatry :The
 Journal of the American Association of Directors of Psychiatric Residency
 Training and the Association for Academic Psychiatry*, 39(5), 503–511.
<https://doi.org/10.1007/s40596-014-0205-9>
- Philippe, F. L., Laventure, S., Beaulieu-Pelletier, G., Lecours, S., & Lekes, N. (2011),
 Ego-Resiliency as a mediator between childhood trauma and psychological
 symptoms. *Journal of Social and Clinical Psychology*, 30(6), 583-598.
- Piaget, J. (2000). *Play, dreams and imitation in childhood*. Routledge.
- Poole, J., Dobson, K., & Pusch, D. (2017). Childhood adversity and adult depression: The
 protective role of psychological resilience. *Child Abuse & Neglect*, 64, 89–100.
<https://doi.org/10.1016/j.chiabu.2016.12.012>
- Prakash, R., Whitmoyer, P., Aldao, A., & Schirda, B. (2017). Mindfulness and emotion
 regulation in older and young adults. *Aging & Mental Health*, 21(1), 77–87.
<https://doi.org/10.1080/13607863.2015.1100158>

- Prevatt, F., Dehili, V., Taylor, N., & Marshall, D. (2015). Anxiety in college students with ADHD: Relationship to cognitive functioning. *Journal of Attention Disorders, 19*(3), 222–230. <https://doi.org/10.1177/1087054712457037>
- Rehan, W., Antfolk, J., Johansson, A., Jern, P., & Santtila, P. (2017). Experiences of severe childhood maltreatment, depression, anxiety, and alcohol abuse among adults in Finland, *PLOS One, 12*(5), 1-12.
- Rezaei, M., Ghazanfari, F., & Rezaee, F. (2016). The role of childhood trauma, early maladaptive schemas, emotional schemas, and experimental avoidance on depression: A structural equation modeling. *Psychiatry Research, 246*, 407-414.
- Fosse, R., Skjelstad, D. V., Schalinski, I., Thekkumthala, D., Elbert, T., Aanondsen, C. M., Greger, H. K., & Jozefiak, T. (2020). Measuring childhood maltreatment: Psychometric properties of the Norwegian version of the Maltreatment and Abuse Chronology of Exposure (MACE) scale. *PloS one, 15*(2), e0229661. <https://doi.org/10.1371/journal.pone.0229661>
- Rossiter, A., Byrne, F., Wota, A., Nisar, Z., Ofuafor, T., Murray, I., Hallahan, B. (2015). Childhood trauma levels in individuals attending adult mental health services: An evaluation of clinical records and structured measurement of childhood trauma. *Child Abuse & Neglect, 44*, 36–45. <https://doi.org/10.1016/j.chiabu.2015.01.001>
- Rutter, L., & Brown, T. (2017). Psychometric properties of the generalized anxiety disorder scale-7 (GAD-7) in outpatients with anxiety and mood disorders. *Journal of Psychopathology and Behavioral Assessment, 39*(1), 140–146. <https://doi.org/10.1007/s10862-016-9571-9>

- Schalinski, I., Teicher, M., Nischk, D., Hinderer, E., Müller, O., & Rockstroh, B. (2016). Type and timing of adverse childhood experiences differentially affect severity of PTSD, dissociative and depressive symptoms in adult inpatients. *BMC Psychiatry*, 16(1), 295. <https://doi.org/10.1186/s12888-016-1004-5>
- Schmidt, M. R., Narayan, A. J., Atzl, V. M., Rivera, L. M., & Lieberman, A. F. (2020). Childhood maltreatment on the adverse childhood experiences (ACEs) scale versus the childhood trauma questionnaire (CTQ) in a perinatal sample. *Journal of Aggression, Maltreatment, & Trauma*, 29(1), 38–56. <https://doi.org/10.1080/10926771.2018.1524806>
- Shorey, R. C., Brasfield, H., Anderson, S., & Stuart, G. L. (2015). The relation between trait mindfulness and early maladaptive schemas in men seeking substance use treatment. *Mindfulness*, 6(2), 348–355. <https://doi.org/10.1007/s12671-013-0268-9>
- Shorey, R. C., Brasfield, H., Anderson, S., & Stuart, G. L. (2014). Differences in trait mindfulness across mental health symptoms among adults in substance use treatment. *Substance use & misuse*, 49(5), 595–600. <https://doi.org/10.3109/10826084.2014.850310>
- Schury, K., Zimmerman, J., Umlauft, M., Hulbert, A.L., Guendal, H., Ziegenhain, U., & Kolassa, I. T., (2017). Childhood maltreatment, postnatal distress, and the protective role of social support, *Child Abuse and Neglect*, 67, 228-239.
- Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373-386.

- Shin, S. H., McDonald, S. E., & Conley, D. (2018). Profiles of adverse childhood experiences and impulsivity. *Child Abuse & Neglect*, 85, 118-126. doi:10.1016/j.chiabu.2018.07.028
- Sinclair, S., Siefert, C., Slavin-Mulford, J., Stein, M., Renna, M., & Blais, M. (2012). Psychometric evaluation and normative data for the depression, anxiety, and stress scales-21 (DASS-21) in a nonclinical sample of us adults. *Evaluation & the Health Professions*, 35(3), 259–279. <https://doi.org/10.1177/0163278711424282>
- Smith, O. R. F., Melkevik, O., Samdal, O., Larsen, T. M., & Haug, E. (2017). Psychometric properties of the five-item version of the mindful awareness attention scale (MAAS) in Norwegian adolescents. *Scandinavian Journal of Public Health*, 45(4), 373-380. doi:10.1177/1403494817699321
- Smit, B., & Stavroulaki, E. (2021). The efficacy of a mindfulness-based intervention for college students under extremely stressful conditions. *Mindfulness*, 1–15. <https://doi.org/10.1007/s12671-021-01772-9>
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Tanaka, N., Hasui, C., Uji, M., Hiramura, H., Chen, Z., Shikai, N., & Kitamura, T. (2008). Correlates of the categories of adolescent attachment styles: Perceived rearing, family function, early life events, and personality. *Psychiatry and Clinical Neurosciences*, 62, 65-74.

- Tang, R., & Braver, T. S. (2020). Predicting individual preferences in mindfulness techniques using personality traits. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.01163>
- Teicher, M. H., & Parigger, A. (2015). The maltreatment and abuse chronology of exposure (MACE) scale for the retrospective assessment of abuse and neglect during development. *PloS One*, 10(2).
- Torgerson, C., Love, H., & Vennum, A. (2018). The buffering effect of belonging on the negative association of childhood trauma with adult mental health and risky alcohol use. *Journal of Substance Abuse Treatment*, 88, 44–50. <https://doi.org/10.1016/j.jsat.2018.02.005>
- Troxel, W. M., Trentacosta, C. J., Forbes, E. E., & Campbell, S. B. (2013). Negative emotionality moderates associations among attachment, toddler sleep, and later problem behaviors. *Journal of Family Psychology*, 27,(1), 127-136.
- U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2020). *Child Maltreatment 2018*.
- Van Dam, N. T., Earleywine, M., & Borders, A. (2010). Measuring mindfulness? An item response theory analysis of the mindful attention awareness scale. *Personality and Individual Differences*, 49(7), 805-810. [doi:10.1016/j.paid.2010.07.020](https://doi.org/10.1016/j.paid.2010.07.020)
- Voellmin, A., Winzeler, K., Hug, E., Wilhelm, F., Schaefer, V., Gaab, J., La Marca, R., Pruessner, J., & Bader, K. (2015). Blunted endocrine and cardiovascular reactivity

in young healthy women reporting a history of childhood adversity.

Psychoneuroendocrinology, 51, 58–67.

<https://doi.org/10.1016/j.psyneuen.2014.09.008>

- Wingenfeld, K., Schaffrath, C., Rullkoetter, N., Mensebach, C., Schlosser, N., Beblo, T., Driessen, M., & Meyer, B. (2011). Associations of childhood trauma, trauma in adulthood, and previous-year stress with psychopathology in patients with major depression and borderline personality disorder, *Child Abuse and Neglect*, 35, 647-654.
- Winters, D. E., & Beerbower, E. (2017). Mindfulness and meditation as an adjunctive treatment for adolescents involved in the juvenile justice system: Is repairing the brain and nervous system possible? *Social Work in Health Care*, 56 (7), 615-635.
- Wolff, N., & Shi, J. (2012). Childhood and adult trauma experiences of incarcerated persons and their relationship to adult behavioral health problems and treatment. *International Journal of Environmental Research and Public Health*, 9, 1908-1926.

APPENDIX A

Table 1

Sociodemographic Characteristics of Participants in Study

Demographics	n	%
Total Participants	392	100
Gender		
Male	85	21.7
Female	291	74.2
Non-Binary	9	2.3
Other/Unspecified	7	1.8
Ethnicity*		
American Indian/Alaskan	10	2.6
Asian	37	9.4
Black/African American	43	11
Hispanic/Latinx	125	31.9
Middle Eastern	8	2
Native Hawaiian/Pacific Island	2	.5
White	157	40
Prefer Not to Answer	7	1.8
Other*	3	.8
Class Ranking*		
Freshmen	36	9.2
Sophomores	41	10.5
Juniors	144	36.7
Seniors	96	24.5
Master's	4	1.0
Unspecified*	71	18.1

*Some individuals selected an unspecified class ranking. *Some individuals endorsed multiple ethnicities.

Table 2*Univariate and Descriptive Statistics for Variables of Interest*

Variables	n	Mn	SD	Ran.	Min	Max	Skew	Kur.
Trait Mindfulness								
MAAS	392	2.97	1.03	5.0	1.0	6.0	-.02	-.63
Anxiety								
GAD-7	392	8.58	6.01	21	0	21	.46	-.86
Depression								
DASS-21 Dep	392	10.98	10.67	42	0	42	1.00	.15
Maltreatment Severity								
MACE SUM	392	13.12	4.57	27	0	27	.25	-.14
Maltreatment Multiplicity								
MACE MUL	392	4.61	.86	6	0	6	-1.32	4.07

Table 3.1***Moderation Model for Maltreatment Multiplicity on Anxiety (GAD-7)***

Effects	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Fixed effects				
Intercept	8.53	0.23	36.78	.001
Maltreatment Multiplicity	-0.01	.28	-0.40	.97
Mindfulness	3.89	.23	16.81	.001
Multiplicity: GAD-7	.23	.21	1.07	.29

Note. *N* = 392. Standard errors are reported using Huber-White robust standard estimates.

Table 3.2***Moderation Model for Maltreatment Severity on Anxiety (GAD-7)***

Effects	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Fixed effects				
Intercept	8.53	0.24	35.34	.001
Maltreatment Severity	0.03	0.05	0.64	0.53
Mindfulness	3.82	0.24	15.90	.001
Severity:GAD-7	0.03	0.05	0.59	0.56

Note. *N* = 392. Standard errors are reported using Huber-White robust standard estimates.

Table 3.3***Moderation Model for Maltreatment Multiplicity on Depression (DASS-21)***

Effects	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Fixed effects				
Intercept	11.04	0.45	24.47	.001
Mindfulness	5.86	0.45	13.02	.001
Maltreatment Multiplicity	0.25	0.45	0.46	0.65
Multiplicity:DEPDASS	-0.25	0.41	-0.61	0.54

Note. N = 392. Standard errors are reported using Huber-White robust standard estimates.

Table 3.4***Moderation Model for Maltreatment Severity on Depression (DASS-21)***

Effects	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Fixed effects				
Intercept	11.04	0.47	23.54	.001
Mindfulness	5.80	0.47	12.42	.001
Maltreatment Severity	0.08	0.10	0.76	0.45
Severity:DEPDASS	-0.04	0.10	-0.37	0.71

Note. N = 392. Standard errors are reported using Huber-White robust standard estimates.

APPENDIX B

<p>Sometimes parents, stepparents or other adults living in the house do hurtful things.</p> <p>If this happened during your childhood (first 18 years of your life), please check 'Yes'. If this did not happen in your childhood, please check 'No.'</p>		
1.	Swore at you, called you names, said insulting things like you're "fat", "ugly", "stupid", etc. more than a few times a year.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
2.	Said hurtful things that made you feel bad, embarrassed or humiliated more than a few times a year.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
3.	Acted in a way that made you afraid that you might be physically hurt.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
4.	Threatened to leave or abandon you.	<input type="checkbox"/> Yes <input type="checkbox"/> No0
5.	Locked you in a closet, attic, basement or garage.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
6.	Intentionally pushed, grabbed, shoved, slapped, pinched, punched or kicked you.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
7.	Hit you so hard that it left marks for more than a few minutes.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
8.	Hit you so hard, or intentionally harmed you in some way, that you received or should have received medical attention.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
9.	Spanked you on your buttocks, arms or legs.	<input type="checkbox"/> Yes <input type="checkbox"/> No0
10.	Spanked you on your bare (unclothed) buttocks.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
11.	Spanked you with an object such as a strap, belt, brush, paddle, rod, etc.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
12.	Made inappropriate sexual comments or suggestions to you.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0
13.	Touched or fondled your body in a sexual way.	<input type="checkbox"/> Yes1 <input type="checkbox"/> No0

14.	Had you touch their body in a sexual way.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
-----	---	------------------------------	-----------------------------

<p>Sometimes parents, stepparents or other adults living in the house do hurtful things to your <u>siblings</u> (brother, sister, stepsiblings). If this happened during your childhood (first 18 years of your life), please check ‘Yes’. If this did not happen in your childhood, please check ‘No.’</p>			
15.	Hit your sibling (stepsibling) so hard that it left marks for more than a few minutes.	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0
16.	Hit your sibling (stepsibling) so hard, or intentionally harmed him/her in some way, that he/she received or should have received medical attention.	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0
17.	Made inappropriate sexual comments or suggestions to your sibling (stepsibling).	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0
18.	Touched or fondled your sibling (stepsibling) in a sexual way.	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0

<p>Sometimes adults or older individuals NOT living in the house do hurtful things to you. If this happened during your childhood (first 18 years of your life), please check ‘Yes’. If this did not happen in your childhood, please check ‘No.’</p>			
19.	Had you touch their body in a sexual way.	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0
20.	Actually had sexual intercourse (oral, anal or vaginal) with you.	<input type="checkbox"/> Yes1	<input type="checkbox"/> No0

<p>Sometimes intense arguments or physical fights occur between parents, stepparents or other adults (boyfriends, girlfriends, grandparents) living in the household. If this happened during your childhood (first 18 years of your life), please check ‘Yes’. If this did not happen in your childhood, please check ‘No.’</p>			
---	--	--	--

21.	Saw adults living in the household push, grab, slap or throw something at your mother (stepmother, grandmother).	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
22.	Saw adults living in the household hit your mother (stepmother, grandmother) so hard that it left marks for more than a few minutes.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
23.	Saw adults living in the household hit your mother (stepmother, grandmother) so hard, or intentionally harm her in some way, that she received or should have received medical attention.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
24.	Saw adults living in the household push, grab, slap or throw something at your father (stepfather, grandfather).	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
25.	Saw adults living in the household hit your father (stepfather, grandfather) so hard that it left marks for more than a few minutes.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀

<p>Sometimes children your own age or older do hurtful things like bully or harass you.</p> <p>If this happened during your childhood (first 18 years of your life), please check 'Yes'. If this did not happen in your childhood, please check 'No.'</p>			
26.	Swore at you, called you names, said insulting things like your "fat", "ugly", "stupid", etc. more than a few times a year.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
27.	Said hurtful things that made you feel bad, embarrassed or humiliated more than a few times a year.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
28.	Said things behind your back, posted derogatory messages about you, or spread rumors about you.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
29.	Intentionally excluded you from activities or groups.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
30.	Acted in a way that made you afraid that you might be physically hurt.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
31.	Threatened you in order to take your money or possessions.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
32.	Forced or threatened you to do things that you did not want to do.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀

33.	Intentionally pushed, grabbed, shoved, slapped, pinched, punched, or kicked you.	<input type="radio"/> Yes1 <input type="radio"/> No0
33.	Hit you so hard that it left marks for more than a few minutes.	<input type="radio"/> Yes1 <input type="radio"/> No0
35.	Hit you so hard, or intentionally harmed you in some way, that you received or should have received medical attention.	<input type="radio"/> Yes1 <input type="radio"/> No0
36.	Forced you to engage in sexual activity against your will.	<input type="radio"/> Yes1 <input type="radio"/> No0
37.	Forced you to do things sexually that you did not want to do.	<input type="radio"/> Yes1 <input type="radio"/> No0

<p>Please indicate if the following happened during your childhood (first 18 years of your life). If this happened during your childhood (first 18 years of your life), please check 'Yes'. If this did not happen in your childhood, please check 'No.'</p>		
38.	You felt that your mother or other important maternal figure was present in the household but emotionally unavailable to you for a variety of reasons like drugs, alcohol, workaholic, having an affair, heedlessly pursuing their own goals.	<input type="radio"/> Yes1 <input type="radio"/> No0
39.	You felt that your father or other important paternal figure was present in the household but emotionally unavailable to you for a variety of reasons like drugs, alcohol, workaholic, having an affair, heedlessly pursuing their own goals.	<input type="radio"/> Yes1 <input type="radio"/> No0
40.	A parent or other important parental figure was very difficult to please.	<input type="radio"/> Yes1 <input type="radio"/> No0
41.	A parent or other important parental figure did not have the time or interest to talk to you.	<input type="radio"/> Yes1 <input type="radio"/> No0
42.	One or more individuals in your family made you feel loved.	<input type="radio"/> Yes1 <input type="radio"/> No0

43.	One or more individuals in your family helped you feel important or special.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
44.	One or more individuals in your family were there to take care of you and protect you.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
45.	One or more individuals in your family were there to take you to the doctor or Emergency Room if the need ever arose, or would have if needed.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀

<p>Please indicate if the following statements were true about you and your family during your childhood.</p> <p>If this happened during your childhood (first 18 years of your life), please check ‘Yes’. If this did not happen in your childhood, please check ‘No.’</p>			
46.	You didn’t have enough to eat.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
47.	You had to wear dirty clothes.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
48.	You felt that you had to shoulder adult responsibilities.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
49.	You felt that your family was under severe financial pressure.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
50.	One or more individuals kept important secrets or facts from you.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
51.	People in your family looked out for each other.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀
52.	Your family was a source of strength and support.	<input type="radio"/> Yes ₁	<input type="radio"/> No ₀

APPENDIX C

Mindful Attention Awareness Scale

Day-to-Day Experiences Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of	1	2	3	4	5	6

physical tension or discomfort until they really grab my attention.						
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic", without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6

I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on “automatic pilot” and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I’m eating.	1	2	3	4	5	6

MAAS Scoring: To score the scale, simply compute a mean of the 15 items. Higher scores reflect higher levels of dispositional mindfulness.

Note: **For the purpose of this study the items on the MAAS were reverse scored. **

APPENDIX D

Generalized Anxiety Disorder– 7

Over the last two weeks how often have you been bothered by the following problems?

	Not at all (0)	Several days (1)	Over half the days (2)	Nearly every day (3)
Feeling nervous, anxious, or on edge				
Not being able to stop or control worrying				
Worrying too much about different things				
Trouble relaxing				
Being so restless that it's hard to sit still				
Becoming easily annoyed or irritable				
Feeling afraid as if something awful might happen				

APPENDIX E

Depression, Anxiety, Stress Scale – 21

Please read each statement and choose a number 0, 1, 2 or 3 which indicates how much the statement applied to you over *the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

	0 Did not apply to me at all	1 Applied to me to some degree or some of the time	2 Applied to me a considerable degree, or a good part of time	3 Applied to me very much or most of the time
I found it hard to wind down				
I was aware of dryness of my mouth				
I couldn't seem to experience any positive feeling at all				
I experienced breathing difficulty (excessively rapid breathing, breathlessness in the absence of physical exertion)				
I found it difficult to work up the initiative to do things				
I tended to over-react to situations				

I experienced trembling (e.g. in the hands)				
I felt that I was using a lot of nervous energy				
I was worried about situations in which I might panic and make a fool of myself				
I felt that I had nothing to look forward to				
I found myself getting agitated				
I found it difficult to relax				
I felt down-hearted and blue				
I was intolerant of anything that kept me from getting on with what I was doing				
I felt I was close to panic				
I was unable to become enthusiastic about anything				
I felt I wasn't worth much as a person				
I felt that I was rather touchy				
I was aware of the action of				

my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)				
I felt scared without any good reason				
I felt that life was meaningless				