RESILIENCE IN THE FACE OF ADVERSITY: EXAMINING COPING STRATEGIES AND COGNITIVE EMOTIONAL REGULATION IN MITIGATING THE IMPACT OF ADVERSE CHILDHOOD EXPERIENCES (ACES)

A DISSERTATION SUBMITTED TO THE FACULTY

OF

PSY.D. (DOCTOR OF PSYCHOLOGY) PROGRAM IN CLINICAL PSYCHOLOGY

OF

WILLIAM PATERSON UNIVERSITY OF NEW JERSEY

BY

AVIANNE O. SMITH

IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

APPROVED

May 2025

Aileen Torres, Ph.D., Dissertation Chair

Bruce Diamond, Ph.D., 2nd Committee Member

Melodie Foellmi, Ph.D., 3rd Committee Member

Abstract

Adverse Childhood Experiences (ACEs), including abuse, neglect, and household dysfunction, are well-established risk factors for adverse mental health outcomes in adulthood. However, the mechanisms through which ACEs influence coping strategies, psychiatric symptoms, and resilience remain less understood. This study examined these relationships in a sample of university students. Participants ($N = 107$) completed self-report measures assessing ACEs, coping strategies, psychiatric symptoms, and resilience. Independent samples t-tests and ANCOVA analyses revealed that individuals with high ACE scores (≥ 4) reported significantly greater use of maladaptive coping strategies compared to those with lower ACE scores (<4). Multiple linear regression analysis indicated that higher ACE scores were significantly associated with greater psychiatric symptom severity, even after controlling for age and gender. A hierarchical regression analysis tested whether adaptive coping strategies moderated the relationship between ACEs and psychiatric symptoms, but no significant interaction effects were found. Finally, multiple linear regression analysis demonstrated that ACE scores were negatively associated with resilience, though adaptive coping strategies did not significantly predict resilience. These findings suggest that resilience is much more complex than engaging in adaptive coping behaviors or adaptive cognitions. Future research should explore additional factors that may buffer against the negative effects of ACEs.

Acknowledgments

I would like to express my sincere gratitude to the participants who generously contributed their time and effort to this study. Without their willingness to share their experiences, this research would not have been possible.

A special thank you to my dissertation chair and mentor, Dr. Aileen Torres, whose guidance, insight, and encouragement were invaluable in shaping this research. Her unwavering support helped me navigate the complexities of this study and inspired me to continuously strive for excellence. I would also like to acknowledge the assistance of my other dissertation committee members, Dr. Bruce Diamond and Dr. Melodie Foellmi, whose expertise and feedback enhanced the quality of this work. Thank you for your continued guidance and support.

Finally, I would like to extend my deepest appreciation to my family and friends for their understanding, patience, and support during this process. Your encouragement and belief in me kept me motivated through every stage of this research.

Resilience in the Face of Adversity: Examining Coping Strategies and Cognitive Emotional

Regulation in Mitigating the Impact of Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) are significant risk factors associated with various negative outcomes in adulthood, including criminal behavior, mental health challenges, and physical health issues. ACEs encompass major forms of maltreatment, such as physical, sexual, or psychological abuse, and exposure to household dysfunction, including domestic violence, parental substance use, parental mental health issues, and parental incarceration. These early-life adversities can profoundly influence mental health and overall well-being. According to the National Institute of Justice (NIJ), child abuse and neglect increase the likelihood of juvenile arrest by 59 percent (Widom & Maxfield, 2001). Moreover, the Centers for Disease Control and Prevention (CDC) (as cited by the NIJ) report that ACEs increase the likelihood of adult criminal behavior by 28 percent and violent crime involvement by 30 percent (Widom & Maxfield, 2001). Despite these findings, there is variability in outcomes, as some individuals with significant ACEs exposure exhibit resilience and lead healthy, functional lives. This study explores the role of coping strategies and cognitive emotion regulation skills as potential mediators that promote resilience among individuals exposed to ACEs.

The Impact of ACEs on Behavioral and Mental Health Outcomes

Research has consistently demonstrated the profound and lasting impact of Adverse Childhood Experiences (ACEs) on both mental and physical health. Early work by Felitti et al. (1998) found that individuals with four or more ACEs faced significantly higher risks, ranging from four to twelve times greater, for issues such as alcoholism, drug abuse, depression, and suicide attempts. More recent studies have reinforced these findings, showing that the effects of ACEs extend well into adulthood. For example, a meta-analysis by Hughes et al. (2017) linked

ACEs to a range of negative adult outcomes, including substance abuse, mental illness, and even criminal behavior. Similarly, Petruccelli et al. (2019) highlighted the high prevalence of self-harm and suicidality among those exposed to early adversity, further illustrating the serious psychological toll of childhood trauma.

In addition to internalizing symptoms like depression and anxiety, ACEs contribute to externalizing problems such as aggression and antisocial behavior. These behavioral outcomes highlight the multifaceted nature of ACEs' impact—further underscoring the importance of understanding mechanisms like coping and resilience. Maughan and McCarthy (1997) found that children who had experienced physical abuse were significantly more likely to exhibit aggressive and antisocial behaviors, patterns that were often observed through parent and staff ratings. Mennen et al. (2010) extended this understanding by comparing different forms of maltreatment, finding that while physically abused children displayed higher levels of aggression, neglected children also showed notable social and emotional difficulties. The long-term consequences of these behavioral patterns have been well-documented. Longitudinal research suggests that children exposed to severe violence are at increased risk for conduct disorder, persistent anger, and aggressive outbursts later in life (Afifi & MacMillan, 2011). Further, Dodge et al. (1990) found that individuals who experienced abuse and neglect were more likely to engage in criminal activity at an earlier age and had higher rates of arrest than those who had not endured such adversities.

Taken together, these findings demonstrate evidence of the ways in which early adversity shapes both psychological well-being and behavioral outcomes. While ACEs are often discussed in the context of individual risk, their effects are far-reaching, influencing not just personal struggles with mental health but also broader societal concerns such as crime and public health.

Understanding these relationships underscores the importance of early intervention and the need for targeted support systems that help individuals develop healthier coping mechanisms, ultimately reducing the long-term burden of childhood adversity.

This study is theoretically guided by Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, which posits that coping responses influence psychological outcomes by mediating or moderating how stressors such as ACEs are appraised and managed. This framework is complemented by contemporary resilience models (Masten, 2001; Windle, 2011), which conceptualize resilience as a dynamic process shaped by multiple protective factors, including adaptive coping. These theories provide a foundation for examining whether individuals exposed to ACEs can maintain psychological well-being through the use of cognitive and behavioral coping strategies.

Resilience and Variability in Outcomes Following ACEs

While many individuals who experience ACEs go on to develop mental health challenges or engage in high-risk behaviors, others show remarkable resilience. Green et al. (2010) found that a substantial number of individuals with ACEs exposure do not develop psychiatric disorders or behavioral issues, suggesting that certain protective factors may help buffer against adversity defined in this manner. This variability raises an important question: What allows some individuals to thrive despite early hardship?

Masten (2001) defines resilience as the "phenomena characterized by good outcomes in spite of serious threats to adaptation or development (p. 228)." Masten's (2001) review of the literature suggests that resilience does not come from unusual and extraordinary qualities, but rather from the everyday, normative human resources. Windle's (2011) review of several theorists considers the neurobiological avoidance of developing psychopathology as an important

aspect of resilience; therefore, suggesting resilience could have a genetic component. Other resilience researchers focus on the environmental/ecological aspects of resilience (e.g. community, social supports); whereas other scholars have explored personality characteristics. The consensus is that there is not one fixed attribute that defines resilience and there is likely a complex interplay of factors. However, there is a dearth of research on behavioral and cognitive coping strategies and how these may impact resilience.

Vella and Pai (2019) contribute to the evolving conceptualization of resilience by tracing its theoretical development across disciplines and decades. They emphasize that resilience is not a static trait but a dynamic process that evolves over time and can vary across different contexts and stressors. In other words, resilience is context-dependent and can vary across life stages and circumstances, suggesting that no single pathway or factor determines resilient outcomes. Their review highlights that resilience is shaped through the interaction of biological, psychological, and environmental factors, reinforcing the idea that resilience is not merely about individual strength, but about the capacity to adapt through supportive systems and learned psychological skills. Importantly, they argue for a shift away from viewing resilience as a rare or heroic quality and toward understanding it as an ordinary process that can be nurtured. This perspective aligns closely with Masten's (2001) notion of resilience emerging from normative human resources and supports the idea that resilience may be cultivated through both internal and external means (Vella & Pai, 2019).

In addition to redefining resilience as a dynamic and multifaceted process, Vella and Pai (2019) underscore the importance of recognizing individual variability in how resilience manifests. They note that resilience is not solely about "bouncing back" from adversity but can also involve significant psychological transformation and growth. This perspective calls for

deeper investigation into the specific mechanisms that facilitate such positive adaptation, particularly behavioral and cognitive coping strategies. Despite the growing recognition of resilience as a process, relatively little is known about how individuals' coping thoughts and behaviors directly shape resilient outcomes following ACEs. Exploring the ways in which people appraise stress, utilize problem-solving techniques, engage in cognitive reframing, or seek meaning in adversity may illuminate new pathways to resilience. Understanding these strategies could offer valuable insight into interventions aimed at enhancing resilience, especially among populations exposed to early life trauma.

Coping Strategies and Emotional Regulation

Coping strategies play a crucial role in shaping how individuals respond to the stress of ACEs. Coping is broadly defined as the cognitive and behavioral efforts used to manage or alter stressful experiences (Dyson & Renk, 2006). However, not all coping mechanisms are equally effective. Individuals with a history of ACEs often rely on maladaptive coping strategies, such as self-distraction, denial, and disengagement, which have been linked to negative mental and physical health outcomes. In contrast, adaptive coping strategies, such as problem-focused coping, help individuals directly address and resolve stressors, leading to better long-term outcomes (Dyson & Renk, 2006; Sheffler et al., 2019). These findings highlight the importance of understanding not only whether individuals cope, but how they cope.

Gender differences also play a role in coping with adversity. Research suggests that men are more likely to engage in problem-focused coping, actively working to solve problems, while women are more prone to use avoidant or emotion-focused strategies, which can sometimes be maladaptive (Dyson & Renk, 2006; Sheffler et al., 2019). These differences may contribute to

variations in mental health outcomes following ACEs exposure, underscoring the need for gender-sensitive interventions that encourage the development of healthier coping mechanisms.

Beyond coping strategies, emotion regulation is another key factor influencing resilience. Emotion regulation refers to an individual's ability to recognize, monitor, and modify emotional responses to maintain psychological well-being (Cloitre et al., 2019). When individuals struggle to regulate their emotions, an issue commonly seen in those with a history of ACEs, they may be at higher risk for developing conditions such as post-traumatic stress disorder (PTSD) and depression (Cloitre et al., 2019). However, research suggests that strong emotion regulation skills can serve as a protective factor, helping individuals manage distress more effectively and reducing the long-term impact of ACEs.

Sheffler et al. (2019) found that individuals with strong emotion regulation skills were better equipped to manage the psychological effects of early adversity, reducing their risk for mental health problems. This suggests that emotion regulation acts as a buffer, helping individuals process difficult experiences in a way that prevents long-term distress. Similarly, Dyson and Renk (2006) emphasized the importance of promoting problem-focused coping strategies, approaches that involve actively addressing stressors rather than avoiding them. Individuals who develop these adaptive coping skills tend to experience better mental health and overall well-being, reinforcing the idea that how one copes with adversity can be just as important as the adversity itself.

Overall, these findings emphasize that while ACEs can have lasting effects, they do not determine an individual's fate. Resilience is shaped by a combination of internal and external factors, and interventions that strengthen emotion regulation, encourage adaptive coping strategies, and foster meaningful social connections can significantly improve outcomes. By

shifting the focus from risk to resilience, research and clinical practice can work toward

empowering individuals to overcome the challenges of early adversity and build healthier, more

fulfilling lives.

Research Gaps and Study Objectives

While substantial research has established the link between Adverse Childhood

Experiences (ACEs) and negative mental health outcomes, several gaps remain in the literature.

First, although studies have examined the role of coping strategies in mitigating the effects of

ACEs, there is limited research on how specific coping styles, such as problem-focused versus

emotion-focused coping, mediate or moderate the relationship between ACEs and psychiatric

symptoms. Further investigation is needed to determine which coping strategies are most

effective in fostering resilience among individuals with a history of adversity. Additionally,

much of the existing literature has focused on clinical or at-risk populations, with fewer studies

examining these relationships in university students. Few studies have explored whether adaptive

coping strategies moderate the link between ACEs and psychiatric symptoms in non-clinical,

young adult samples. University students represent a unique group, facing specific stressors and

developmental challenges that may differ from those encountered in other populations.

Investigating ACEs in this context is critical, as it can provide valuable insights into how

early adversity influences young adults' psychological well-being, coping mechanisms, and

resilience in academic and social environments. This study aims to address these gaps by

exploring how coping strategies and cognitive emotion regulation skills contribute to resilience

among university students with a history of ACEs. By identifying the coping strategies that

mediate or moderate the relationship between ACE exposure and mental health outcomes, the

study seeks to inform the development of interventions that can support individuals in building healthier life outcomes.

Based on previous research, the following hypotheses are proposed: (1) it is hypothesized that participants with ACE scores ≥ 4 will report significantly higher scores on maladaptive coping strategies (e.g. self-blame, denial, behavioral disengagement) on the Brief COPE Inventory and CERQ compared to those with ACE scores < 4, controlling for age and gender; (2) it is expected that participants with ACE scores ≥ 4 will report significantly higher symptom severity across psychiatric domains on the DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom Measure compared to participants with ACE scores < 4, controlling for demographic variables; (3) it is predicted that adaptive coping strategies (e.g., active coping, positive reframing, emotional support) on the Brief COPE Inventory and CERQ will significantly moderate the relationship between ACE scores and psychiatric symptoms, such that the positive association between ACEs and psychiatric symptoms will be weaker among participants with higher adaptive coping scores; and (4) it is hypothesized that participants with higher scores on adaptive coping strategies (e.g., positive refocusing, positive reframing, acceptance) on the Brief COPE Inventory and CERQ will report significantly higher resilience scores on the Resilience Scale for Adults (RSA), independent of their ACE scores.

Method

Procedure

Participants were invited to complete an online survey through the Qualtrics platform. The study was approved by the William Paterson University Institutional Review Board (IRB). After providing informed consent, participants completed the measures in the following order: demographic questionnaire, Adverse Childhood Experiences (ACEs) Questionnaire, DSM-5-TR

Self-Rated Level 1 Cross-Cutting Symptom Measure, Brief COPE Inventory, Cognitive Emotion Regulation Questionnaire (CERQ) - Short, Resilience Scale for Adults (RSA), and Marlowe-Crowne Social Desirability Scale (MC-SDS). The survey took approximately 30–40 minutes to complete. All responses were anonymized, and participants were informed of their right to withdraw at any time without penalty. Upon completion of the survey, participants were provided with information about mental health resources available on campus and within the community.

Participants

The participants in this study were undergraduate students recruited from a public university in New Jersey. A total of 122 participants initially completed the survey. However, $n=15$ participants were excluded from the final analyses: eight participants ($n=8$) were removed due to missing more than 5% of responses on one of the measures, one participant ($n=1$) was excluded for being under the age of 18, and six participants ($n=6$) were excluded because they were graduate students. This resulted in a final sample of $n=107$ participants. The sample consisted mostly of female participants ($n = 82$, 76.6%). The majority of participants identified as White or Caucasian ($n = 37$, 34.6%), with the most common age group being 18-24 years old ($n = 84$, 78.5%).

Measures

Adverse Childhood Experiences (ACEs) Questionnaire

The Adverse Childhood Experiences (ACEs) Questionnaire is a 10-item questionnaire used to measure childhood trauma (Felitti et al., 1998; 2019). It assesses 10 types of childhood trauma divided into three main categories, developed from the ACE study, including: abuse (physical abuse, verbal abuse, sexual abuse), neglect (physical neglect, emotional neglect), and

household dysfunction (family mental illness, domestic violence, divorce, parental substance

abuse, and having a parent in prison) (Felitti et al., 1998; 2019). Items are rated as "yes" or "no,"

with higher scores indicating a higher number of ACEs exposure. There is a cutoff score of 4,

whereby scores of 4 and above are viewed as childhood trauma (Felitti et al., 1998; 2019).

Sample questions on the measure include "Did you feel that you didn't have enough to eat, had

to wear dirty clothes, or had no one to protect or take care of you?," "Did you live with anyone

who had a problem with drinking or using drugs, including prescription drugs?" and "Did a

parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?" (Felitti et

al., 1998; 2019). The measure has been demonstrated to be a valid and reliable measure with an

internal consistency of .88 (Felitti et al., 1998; 2019).

DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom Measure

The DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom Measure – Adult Version, is

a 23-item measure, assessing 13 psychiatric domains, including, depression, anger, mania,

anxiety, somatic symptoms, suicidal ideation, psychosis, sleep problems, memory, repetitive

thoughts and behaviors, dissociation, personality functioning, and substance use (APA, 2022).

Items are rated on a 5-point Likert scale, ranging from 0 (none) to 4 (severe or nearly every day).

Higher scores indicate more severe problems (APA, 2022). Sample items include "Feeling panic

or being frightened," "Little interest or pleasure in doing things," and "Feeling that someone

could hear your thoughts, or you could hear what another person was thinking" (APA, 2022).

The measure has demonstrated good validity and reliability with Cronbach alpha coefficient

ranging from .78 to .96 across domains (Bravo et al., 2018).

Brief COPE Inventory

The Brief COPE inventory is a 28-item assessment measure used to assess a broad range of coping responses on a 4-point Likert scale, ranging from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot) (Carver, 1997). It includes some responses that are expected to be dysfunctional, as well as some that are expected to be functional (Carver, 1997). It measures 14 types of coping responses including self-distraction, active coping, denial, substance use, use of emotional support, behavioral disengagement, venting, use of instrumental support, positive reframing, self-blame, planning, humor, acceptance, and religion (Carver, 1997). The total is calculated for each subscale and all subscales' totals are summed to create a total COPE score (Carver, 1997). Sample items on the measure include "I've been getting emotional support from others," "I've been giving up trying to deal with it," "I've been refusing to believe it had happened," and "I've been praying or meditating" (Carver et al., 1989). The measure has been proven to be valid and reliable, with an internal consistency ranging from .81 to .88 (Rahman et al., 2020).

Cognitive Emotion Regulation Questionnaire (CERQ-Short)

The Cognitive Emotion Regulation Questionnaire (CERQ-Short) is an 18-item assessment measure used to assess the cognitive coping strategies utilized by an individual after experiencing a negative or traumatic event or situation (Garnefski & Kraaij, 2006). It was designed to be administered to individuals 12 years and older. It measures 9 different cognitive coping strategies, including self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and other blame (Garnefski & Kraaij, 2006). Items are rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always) (Garnefski & Kraaij, 2001). A sum score is calculated for each

subscale. The nine subscales can be classified into adaptive coping strategies (acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective) and less adaptive coping strategies (self-blame, blaming others, rumination, and catastrophizing) (Garnefski & Kraaij, 2001). Sample items on the measure include "I think that I have to accept that this has happened," "I think I can learn something from the situation," "I feel that I am the one who is responsible for what has happened," and "I continually think how horrible the situation has been" (Garnefski & Kraaij, 2001). The measure has demonstrated good validity and reliability with Cronbach alpha coefficient ranging from .67 to .81 (Garnefski & Kraaij, 2001).

Resilience Scale for Adults (RSA)

The Resilience Scale for Adults (RSA) is a 33-item measure used to assess intrapersonal and interpersonal protective factors presumed to facilitate adaptation to psychosocial adversities and promote resiliency in adults (Friborg et al., 2003). Items are measured on a 7-point Likert scale ranging from 1 to 7, with higher scores indicating stronger resilience resources (Rossi et al., 2021). Items are categorized into 5 main domains: personal competence, social competence, personal structure, family coherence, and social support (Friborg et al., 2003). The total score is derived from calculating the mean score for each subscale. Sample items included "I believe in my own abilities," "I easily establish new friendships," "There are strong bonds in my family," and "I have some close friends/family members who care about me." The measure has demonstrated good validity and reliability with Cronbach alpha coefficient ranging from .67 to .90 and test-retest reliability ranging from .69 to .84 (Friborg et al, 2003).

Marlowe-Crowne Social Desirability Scale (MC-SDS)

The Marlowe-Crowne Social Desirability Scale (MC-SDS) is a 33-item self-report questionnaire that assesses whether respondents are concerned with social approval by producing

socially desirable answers (Crowne & Marlowe, 1960). Items are rated as True or False and

scored as "0" for "false" and "1" for "true." The total social desirability score is found from the

sum of the true statements with the following ranges: low scores (0-8), average scores (9-19),

and high scores (20-33) (Crowne & Marlowe, 1960). Sample items include "I have never

intensely disliked anyone," "I sometimes feel resentful when I don't get my own way," and "No

matter who I'm talking to, I am always a good listener." The measure demonstrated good

validity and reliability with Cronbach alpha coefficient of .78 (Sârbescu et al., 2012).

Statistical Analysis

Data were analyzed using IBM SPSS Statistics (Version 29.0). Prior to conducting the

primary analyses, data were screened for missing values, outliers, and violations of statistical

assumptions. Descriptive statistics were computed for all study variables, including means,

standard deviations, and frequencies, to provide an overview of the sample characteristics.

To test the first hypothesis, independent samples t-tests were conducted to compare

maladaptive coping scores between individuals with high ACE scores (≥ 4) and those with lower

ACE scores (< 4). Additionally, a one-way analysis of covariance (ANCOVA) was conducted to

examine group differences while controlling for age and gender. These analyses helped

determine whether individuals with greater childhood adversity were more likely to engage in

maladaptive coping strategies.

For the second hypothesis, a multiple linear regression analysis was conducted to

examine whether ACE scores significantly predicted psychiatric symptom severity. Age and

gender were included as covariates in the model to control for their potential effects on

psychiatric symptoms.

To assess the third hypothesis, a hierarchical regression moderation analysis was conducted to examine whether adaptive coping strategies moderated the relationship between ACEs and psychiatric symptoms. In the first step, demographic variables (age and gender) were entered as covariates. In the second step, ACE scores and adaptive coping scores (from the Brief COPE and CERQ) were added as predictors. In the third step, the interaction terms between ACEs and adaptive coping strategies were included to assess whether coping strategies altered the strength of the relationship between ACEs and psychiatric symptoms. A significant interaction would indicate that adaptive coping plays a moderating role in this relationship.

For the fourth hypothesis, a multiple linear regression analysis was conducted to examine whether adaptive coping strategies predicted resilience scores, independent of ACE scores. The model included age, gender, total ACE scores, and adaptive coping scores (from the Brief COPE and CERQ) as predictors. This analysis tested whether individuals who engaged in more adaptive coping strategies reported greater resilience, even after accounting for their history of childhood adversity.

Effect sizes were reported for all analyses to provide a clearer understanding of the magnitude of observed effects. Statistical significance was set at $\alpha = .05$, and all tests were two-tailed. Findings were interpreted within the broader context of resilience and trauma research, with an emphasis on clinical implications and future research directions.

Results

Descriptive Statistics

A total of $N=122$ participants initially completed the survey. However, $n=15$ participants were excluded from the final analyses. Eight participants ($n=8$) were removed due to missing more than 5% of responses on one of the measures, one participant ($n=1$) was excluded for being

under the age of 18, and six participants (*n=6*) were removed because they were graduate students. This resulted in a final sample of *N=107* participants (See table 1 for demographics).

Participants ranged in age from 18 to 54 years old, with the majority (78.5%) between the ages of 18 and 24. The remaining participants included 13.1% who were between 25 and 34 years old, 4.7% between 35 and 44 years old, and 3.7% between 45 and 54 years old. Regarding gender identity, most participants identified as female (76.6%), while 21.5% identified as male. A small percentage identified as non-binary or a third gender (0.9%), and another 0.9% preferred not to disclose their gender.

The sample was racially diverse, with 34.6% identifying as White or Caucasian, 21.5% as Black or African American, 8.4% as Asian, 2.8% as American Indian or Native American, and 1.9% as Native Hawaiian or Other Pacific Islander. Additionally, 29.0% selected "Other" to describe their racial background, and 1.9% preferred not to disclose their race.

Most participants had never been married (85.0%), while 8.4% were living with a partner, 3.7% were married, and 2.8% were divorced or separated. In terms of education, 44.9% had completed some college but had not obtained a degree, while 34.6% had a high school diploma or GED. Fewer participants had an associate or technical degree (19.6%), and one participant (0.9%) preferred not to disclose their education level.

Employment status varied across the sample. A significant portion (41.1%) reported working part-time in the past three months, while 18.7% were employed full-time. Students made up 30.8% of the sample, and a smaller percentage reported being unemployed and looking for work (4.7%) or staying at home as a caregiver (1.9%). Additionally, 2.8% selected "Other" to describe their employment status.

Household income levels also varied, with 28.0% reporting an annual income of less than $25,000, 15.0% between $25,000 and $49,999, and 14.0% between $50,000 and $74,999. Smaller percentages reported earning between $75,000 and $99,999 (6.5%), $100,000 and $149,999 (4.7%), or over $150,000 (7.5%). Nearly a quarter of participants (24.3%) preferred not to disclose their income.

Regarding mental health services, most participants (68.2%) had never received psychological or psychiatric care. However, 15.9% reported receiving both psychiatric services and psychotherapy, 9.3% had engaged in psychotherapy alone, and 6.5% had received psychiatric services without therapy. When asked about mental health diagnoses, anxiety (14.0%) and depression (12.1%) were the most commonly reported conditions, while smaller percentages reported diagnoses of bipolar disorder (2.8%) or post-traumatic stress disorder (0.9%). Over half of the sample (53.3%) reported never being diagnosed with a mental illness, while 13.1% indicated that they were never informed of their diagnosis. In terms of psychiatric medication use, 15.0% reported currently taking medication for a mental health condition, 35.5% were not taking medication, and 49.5% indicated that the question was not applicable to them.

Criminal justice involvement was relatively rare among participants. Only 3.7% reported having ever been arrested and booked, while 96.3% had never been arrested. Even fewer participants (0.9%) reported having been sentenced to time in a correctional facility or ordered to complete community service.

Adverse Childhood Experiences

A majority of participants (74.8%) endorsed at least one adverse childhood experience (ACE), highlighting the widespread prevalence of childhood adversity in the sample. The most commonly reported ACE was verbal or emotional abuse, experienced by 51.4% of participants.

Emotional neglect was also frequently endorsed, with 40.2% reporting a lack of familial love or support. Parental separation or divorce was another common ACE, affecting 44.9% of participants. Physical abuse was reported by 36.4% of the sample, while 22.4% disclosed experiences of childhood sexual abuse. Household dysfunction factors were also notable, with 33.6% reporting a caregiver with substance use problems, 25.2% indicating a household member with mental illness or a history of suicide attempts, 20.6% reporting witnessing domestic violence in the home, and 15.9% reporting that a household member had been incarcerated. In contrast, physical neglect was less frequently reported, with only 11.2% indicating experiences of food insecurity or inadequate care (see table 2).

Social Desirability

Descriptive statistics for social desirability responses are presented in Table 3. The mean score for social desirability was 2.32 ($SD = 0.542$). The majority of participants (60.7%) fell within the average range of social desirability, suggesting that they tended to balance their responses between honesty and social acceptability. A smaller proportion of participants (3.7%) scored in the low range, indicating a greater willingness to respond truthfully without concern for social approval. In contrast, 35.5% of participants scored in the high range, suggesting a strong tendency toward social conformity, with responses likely influenced by a desire for social approval and acknowledgment.

Hypothesis 1 (H1): Maladaptive Coping and ACEs

To examine whether participants with ACE scores ≥ 4 reported significantly higher scores on maladaptive coping strategies compared to those with ACE scores < 4, independent samples t-tests were conducted (see Table 4). Participants with high ACE scores reported significantly greater use of maladaptive coping strategies on both the Brief COPE Inventory and

the Cognitive Emotion Regulation Questionnaire (CERQ). Specifically, participants with high ACE scores exhibited significantly higher mean scores on maladaptive coping overall, $t(105) = -2.41$, $p = .018$, self-distraction, $t(105) = -2.43$, $p = .017$, venting, $t(105) = -2.45$, $p = .017$, and externalized blame (CERQ other-blame), $t(105) = -2.87$, $p = .005$.

Other maladaptive coping strategies, such as self-blame, denial, behavioral disengagement, and rumination, did not significantly differ between groups ($p > .05$). Although trends in the expected direction were observed, catastrophizing and overall CERQ maladaptive coping scores did not reach statistical significance.

A one-way ANCOVA was also conducted to examine whether participants with higher ACE scores (≥ 4) reported significantly higher levels of maladaptive coping strategies compared to those with lower ACE scores (<4), while controlling for age, gender, and socioeconomic status (see table 5).

For the Brief COPE Maladaptive Coping subscale, results indicated a statistically significant effect of ACE group, $F(1, 102) = 5.51$, $p = .021$, $\eta^2 = .051$, suggesting that individuals with higher ACE scores reported greater maladaptive coping ($M = 22.89$, $SD = 6.45$) compared to those with lower ACE scores ($M = 19.70$, $SD = 6.42$).

In contrast, for the CERQ Maladaptive Coping subscale, the effect of ACE group was not statistically significant, $F(1, 102) = 1.50$, $p = .223$, $\eta^2 = .015$. Although participants with higher ACE scores reported slightly higher levels of maladaptive coping ($M = 19.94$, $SD = 7.12$) compared to those with lower ACE scores ($M = 18.00$, $SD = 7.23$), this difference did not reach statistical significance.

Hypothesis 2 (H2): Psychiatric Symptoms and ACEs

A multiple linear regression analysis was conducted to examine the relationship between ACE scores (categorized as high vs. low) and symptom severity across psychiatric domains, as measured by the DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom Measure (Total_DSM5SXS), while controlling for age and gender (see table 6). The overall model was statistically significant, $F(3, 103) = 3.69$, $p = .014$, explaining 9.7% of the variance in symptom severity ($R^2 = .097$).

Among the predictors, participants with high ACE scores (≥ 4) reported significantly higher symptom severity compared to those with low ACE scores (< 4), $B = 7.93$, $SE = 3.20$, $\beta = .24$, $t(103) = 2.48$, $p = .015$, with a 95% confidence interval ranging from 1.593 to 14.274. In contrast, age ($B = -3.31$, $p = .108$) and gender ($B = 4.63$, $p = .108$) were not statistically significant predictors of symptom severity, although there was a trend suggesting a potential effect of gender on symptom severity.

Hypothesis 3 (H3): Moderation by Adaptive Coping

A hierarchical multiple regression analysis was conducted to test the hypothesis that adaptive coping strategies (measured using the CERQ and COPE inventories) would moderate the relationship between adverse childhood experiences (ACEs) and psychiatric symptoms (see table 7). Specifically, it was predicted that the positive association between ACEs and psychiatric symptoms would be weaker among participants with higher adaptive coping scores. The analysis included age and gender as covariates.

In the first model, demographic variables (age and gender) were entered as control variables. This model did not significantly explain variance in psychiatric symptoms, $F(2, 104) = 2.35$, $p = .101$, and accounted for 4.3% of the variance in psychiatric symptoms ($R^2 = .043$).

In the second model, adaptive coping strategies (COPE Adaptive Coping and CERQ Adaptive Coping) and total ACE scores were added as predictors. This model significantly predicted psychiatric symptoms, and accounted for a significant increase in variance explained, $\Delta F(3, 101) = 9.74$, $p < .001$, $\Delta R^2 = .215$. The overall model was significant, $R^2 = .258$, $F(5, 101) = 7.02$, $p < .001$. Within this model, total ACEs significantly predicted higher DSM-5 severity, $B = 1.93$, SE $= 0.55$, $\beta = .32$, $t(99) = 3.49$, $p < .001$. Adaptive coping on the COPE also significantly predicted symptom severity, B $= 0.40$, SE $= 0.17$, $\beta = .29$, $t(99) = 2.38$, $p = .019$, suggesting that greater use of adaptive coping strategies was associated with higher symptom severity. CERQ Adaptive Coping was not a significant predictor in this model ($B = -0.07$, $\beta = -.042$, $t(99) = -0.35$, $p = .729$).

The third model added the interaction terms between ACE scores and the two adaptive coping measures (ACE_COPECoping_Interaction and ACE_CERQCoping_Interaction) were entered. This model explained a marginally greater proportion of variance, $R^2 = .296$, $F(7, 99) = 5.95$, $p < .001$, though the increase in explained variance was not statistically significant, $\Delta R^2 = .038$, $\Delta F(2, 99) = 2.69$, $p = .073$. Total ACEs remained a significant predictor of psychiatric symptom severity, $B = 7.33$, SE $= 2.45$, $\beta = 1.21$, $t(99) = 2.99$, $p = .004$. Age also remained significant ($B = -4.61$, $t(99) = -2.47$, $p = .015$), while neither interaction term significantly contributed to the model (ACE_COPECoping_Interaction, $\beta = -.26$, $t(99) = -0.58$, $p = .563$; ACE_CERQCoping_Interaction, $\beta = -.723$, $t(99) = -1.60$, $p = .114$).

Hypothesis 4: Resilience and Adaptive Coping

A multiple linear regression analysis was conducted to examine the role of adaptive coping strategies (measured by the Brief COPE Inventory and CERQ) and adverse childhood experiences (ACEs) in predicting resilience scores, as measured by the Resilience Scale for

Adults (RSA), while controlling for age and gender as covariates (see table 8). The aim was to test whether participants with higher scores on adaptive coping strategies would report significantly higher resilience scores, independent of their ACE scores.

The model, which included age, gender, CERQ Adaptive Coping, COPE Adaptive Coping, and Total ACEs as predictors, was statistically significant, $F(5, 101) = 4.494$, $p < .001$, with an R^2 of .182, indicating that approximately 18.2% of the variance in resilience scores was explained by the predictors.

Significant results were found for Total ACEs, which had a negative association with resilience, $\beta = -0.342$, $t = -3.573$, $p < .001$. This suggests that higher ACE scores were associated with lower resilience scores. Age and gender did not show a significant relationship with resilience ($p > .05$).

Regarding the coping strategies, both COPE Adaptive Coping ($\beta = 0.251$, $t = 1.935$, $p = .056$) and CERQ Adaptive Coping ($\beta = 0.105$, $t = 0.825$, $p = .411$) were not significantly related to resilience.

Discussion

This study aimed to explore the relationship between childhood adversity, coping strategies, psychiatric symptoms, and resilience in a university student sample. Specifically, it tested the role of maladaptive and adaptive coping strategies in predicting psychiatric symptoms and resilience, with ACEs as a key predictor. Overall, the findings provided important insights into how childhood adversity influences coping, mental health, and resilience, with some of the hypotheses supported and others not.

Maladaptive Coping and ACEs (Hypothesis 1)

The first hypothesis predicted that individuals with higher ACE scores (≥4) would report

greater use of maladaptive coping strategies compared to those with lower ACE scores (<4). The

results supported this hypothesis, showing that participants with higher ACEs used more

maladaptive coping strategies, including self-distraction, venting, and externalized blame. These

findings are consistent with existing research, which has shown that individuals with a history of

childhood adversity are more likely to engage in maladaptive coping strategies, which can

exacerbate mental health problems. It suggests that individuals with higher ACE scores may

struggle more to manage stress in adaptive ways, leading them to engage in behaviors that could

potentially exacerbate distress over time.

Interestingly, while the Brief COPE and CERQ measures assessed maladaptive coping in

this study, the ANCOVA analysis revealed a significant effect for maladaptive coping on the

Brief COPE subscale but not on the CERQ subscale. The Brief COPE may be more sensitive to

capturing general maladaptive coping behaviors, while the CERQ, which focuses more on

cognitive emotion regulation, might not fully capture the broader range of maladaptive coping

strategies individuals use. This points to the need for future research to consider a broader array

of coping measures when assessing how individuals with high ACEs manage their emotions and

stress. Additionally, despite significant findings for certain maladaptive strategies, other forms of

maladaptive coping such as rumination, self-blame, and denial did not show significant

differences between the ACE groups. This discrepancy might be due to the variability in how

individuals respond to ACEs and how these coping strategies manifest across different types of

traumas.

Psychiatric Symptoms and ACEs (Hypothesis 2)

The second hypothesis examined whether participants with high ACE scores would report more severe psychiatric symptoms. The results confirmed this hypothesis, showing that individuals with higher ACE scores reported significantly higher psychiatric symptom severity. This result is consistent with a wealth of literature that has demonstrated a strong association between ACEs and mental health disorders, including increased vulnerability to conditions like anxiety, depression, post-traumatic stress disorder, and substance use disorders (Felitti et al., 1998). The fact that ACEs accounted for a significant portion of the variance in psychiatric symptoms, even when controlling for demographic variables like age and gender, suggests that ACEs may be a critical risk factor for mental health problems in young adults.

Most notably, while age and gender were included as covariates, they did not significantly predict psychiatric symptoms in this sample. This could indicate that the effects of ACEs are so pronounced that they overshadow the influence of demographic factors. However, it is also possible that the relatively homogenous nature of the sample (with most participants being young adults) reduced the power to detect meaningful effects for age and gender. Future studies could explore these factors in more diverse or older populations, where the potential interactions between demographic variables and psychiatric symptoms might be more pronounced.

Moderation by Adaptive Coping (Hypothesis 3)

The third hypothesis proposed that adaptive coping strategies would moderate the relationship between ACEs and psychiatric symptoms, with the expectation that higher adaptive coping would reduce the negative effects of ACEs. However, the results did not support this hypothesis. The interaction terms between ACEs and both COPE and CERQ adaptive coping

scores were not significant, indicating that adaptive coping strategies did not buffer the

relationship between ACEs and psychiatric symptoms as expected.

One potential explanation is that the severity of ACEs in the sample may have been so

high that adaptive coping strategies were insufficient to mitigate their impact. In particular,

individuals with high ACEs may be overwhelmed by the emotional and psychological toll of

their experiences, making it difficult for even well-established coping strategies to protect

against psychiatric symptoms. Additionally, the measures of adaptive coping used in this study,

COPE and CERQ, may not capture all the nuances of adaptive coping strategies. Future research

could explore additional measures of coping, such as social support, problem-solving, or emotion

regulation strategies, to determine whether these might better buffer the effects of ACEs.

It is also worth considering that adaptive coping might have a delayed or long-term effect

on symptom reduction that was not captured in the current cross-sectional design. Longitudinal

studies could shed light on whether adaptive coping strategies ultimately protect against the

development of psychiatric symptoms over time, even if they do not immediately moderate the

effects of ACEs.

Resilience and Adaptive Coping (Hypothesis 4)

The final hypothesis aimed to explore whether adaptive coping strategies predicted

resilience scores, independent of ACE scores. The findings indicated that higher ACE scores

were significantly negatively associated with resilience, supporting the idea that ACEs can

hinder the development of resilience. This is consistent with the literature suggesting that

childhood adversity often undermines the ability to recover from stress and adversity later in life.

However, contrary to this hypothesis, adaptive coping strategies, both COPE and CERQ,

did not significantly predict resilience in this sample. Although adaptive coping scores from the

COPE inventory almost approached statistical significance, they did not have a strong enough

effect to be considered a reliable predictor of resilience. This suggests that while adaptive coping

is undoubtedly important for mental health, it might not play as significant a role in promoting

resilience as anticipated.

It is possible that the resilience construct, as measured by the Resilience Scale for Adults

(RSA), captures broader factors, such as social support, personality traits, and life circumstances,

that are not fully accounted for by adaptive coping. Moreover, the negative association between

ACEs and resilience was quite robust, suggesting that individuals with a history of trauma may

face significant barriers to developing resilience, regardless of their coping abilities. In future

research, it may be helpful to explore other potential predictors of resilience, such as positive

personality traits, a supportive social network, or access to resources that can buffer the impact

of adversity.

Limitations and Future Research

While this study provides valuable insights, several limitations should be considered.

First, the cross-sectional nature of the study prevents us from drawing causal conclusions about

the relationships between ACEs, coping, psychiatric symptoms, and resilience. Longitudinal

studies would allow researchers to track the effects of ACEs and coping over time and to better

understand how these factors influence mental health and resilience in the long run.

Second, our sample was relatively homogeneous in terms of age (mostly young adults)

and gender (predominantly female), limiting the generalizability of our findings to other

populations. Future research should aim to include a more diverse sample to better understand

how these relationships play out across different age groups, genders, and cultural backgrounds.

Additionally, future studies could explore how other factors, such as socioeconomic status,

educational attainment, and family dynamics, may interact with ACEs and coping strategies to influence mental health outcomes.

Finally, while the Brief COPE and CERQ are widely used tools for assessing coping strategies, they may not fully capture the complexity of how people cope with adversity. It would be valuable to incorporate additional measures of coping, such as social support or emotional regulation, to provide a more comprehensive understanding of how individuals manage stress.

Conclusion

In conclusion, the results of this study underscore the significant role that ACEs play in maladaptive coping, psychiatric symptoms, and resilience. While adaptive coping strategies appear to have some protective effects, particularly in reducing maladaptive coping, they did not moderate the relationship between ACEs and psychiatric symptoms or significantly predict resilience in this sample. These findings highlight the importance of addressing the long-term effects of ACEs and promoting adaptive coping strategies to enhance resilience, particularly among individuals who have experienced significant childhood adversity. Future research should explore other factors that may contribute to resilience and consider more diverse samples to better understand the interplay between ACEs, coping strategies, and mental health outcomes.

References

Afifi, T. O., & MacMillan, H. L. (2011). Resilience following child maltreatment: A review of protective factors. *The Canadian Journal of Psychiatry, 56*(5), 266–272. https://doi.org/10.1177/070674371105600505

American Psychiatric Association [APA]. (2022). *DSM-5-TR online assessment measures*. https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures

Bravo, A. J., Villarosa-Hurlocker, M. C., Pearson, M. R., & Protective Strategies Study Team (2018). College student mental health: An evaluation of the DSM-5 self-rated level 1 cross-cutting symptom measure. *Psychological Assessment, 30*(10), 1382–1389. https://doi.org/10.1037/pas0000628

Carver, C. S. (1997). You want to measure coping but your protocol's too long: consider the brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92–100. https://doi.org/10.1207/s15327558ijbm0401_6

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267–283. https://doi.org/10.1037/0022-3514.56.2.267

Cloitre, M., Khan, C., Mackintosh, M.-A., Garvert, D. W., Henn-Haase, C. M., Falvey, E. C., & Saito, J. (2019). Emotion regulation mediates the relationship between aces and physical and mental health. *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(1), 82–89. https://doi.org/10.1037/tra0000374

Crowne, D. P., & Marlowe, D. (1960). *Marlowe-Crowne Social Desirability Scale* [Database record]. PsycTESTS. https://doi.org/10.1037/t05257-000

Dodge, K. A., & Crick, N. R. (1990). Social information-processing bases of aggressive behavior

in children. *Personality and Social Psychology Bulletin, 16*(1), 8–22.

https://doi.org/10.1177/0146167290161002

Dyson, R., & Renk, K. (2006). Freshmen adaptation to university life: Depressive symptoms,

stress, and coping. *Journal of Clinical Psychology, 62*(10), 1231–1244.

https://doi.org/10.1002/jclp.20295

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss,

M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction

to many of the leading causes of death in adults. *American Journal of Preventive*

Medicine, 14(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss,

M. P., & Marks, J. S. (2019). Reprint of: Relationship of childhood abuse and household

dysfunction to many of the leading causes of death in adults: The adverse childhood

experiences (ACE) study. *American Journal of Preventive Medicine, 56*(6), 774–786.

https://doi.org/10.1016/j.amepre.2019.04.001

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for

adult resilience: What are the central protective resources behind healthy adjustment?

International Journal of Methods in Psychiatric Research, 12(2), 65–76.

https://doi.org/10.1002/mpr.143

Garnefski, N., & Kraaij, V. (2006). Relationships between cognitive emotion regulation

strategies and depressive symptoms: A comparative study of five specific

samples. *Personality and Individual Differences, 40*(8), 1659–

1669. https://doi.org/10.1016/j.paid.2005.12.009

Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). *Cognitive Emotion Regulation Questionnaire (CERQ)* [Database record]. PsycTESTS. https://doi.org/10.1037/t03801-000

Green, J. G., McLaughlin, K. A., Berglund, P. A., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2010). Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication I. *Archives of General Psychiatry, 67*(2), 113-123. https://doi.org/10.1001/archgenpsychiatry.2009.186

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: A systematic review and meta-analysis. *The Lancet Public Health, 2*(8). https://doi.org/10.1016/s2468-2667(17)30118-4

Lazarus, R. S., and Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *The American Psychologist*, *56*(3), 227–238. https://doi.org/10.1037/0003-066X.56.3.227

Maughan, B., & McCarthy, G. (1997). Childhood adversities and psychosocial disorders. *British Medical Bulletin, 53*(1), 156–169. https://doi.org/10.1093/oxfordjournals.bmb.a011597

Mennen, F. E., Kim, K., Sang, J., & Trickett, P. K. (2010). Child neglect: Definition and identification of youth's experiences in official reports of maltreatment. *Child Abuse & Neglect, 34*(9), 647–658. https://doi.org/10.1016/j.chiabu.2010.02.007

Petruccelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect, 97*, Article 104127. https://doi.org/10.1016/j.chiabu.2019.104127

Rahman, H. A., Issa, W. B., & Naing, L. (2020). Psychometric properties of brief-cope inventory among nurses. *BMC Nursing*, *20*(1), 73. https://doi.org/10.21203/rs.3.rs-84184/v1

Sârbescu, P., Costea, I., & Rusu, S. (2012). Psychometric properties of the Marlowe-Crowne

Social Desirability Scale in a Romanian sample. *Procedia - Social and Behavioral

Sciences, 33*, 707–711. https://doi.org/10.1016/j.sbspro.2012.01.213

Sheffler, J. L., Piazza, J. R., Quinn, J. M., Sachs-Ericsson, N. J., & Stanley, I. H. (2019). Adverse

childhood experiences and coping strategies: Identifying pathways to resiliency in

adulthood. *Anxiety, Stress, and Coping, 32*(5), 594–609.

https://doi.org/10.1080/10615806.2019.1638699

Vella, S.-L., & Pai, N. (2019). A theoretical review of psychological resilience: Defining

resilience and resilience research over the decades. *Archives of Medicine and Health

Sciences, 7*(2), 233. https://doi.org/10.4103/amhs.amhs_119_19

Widom, C.S., & Maxfield, M.G. (2001). *An update on the "cycle of violence," research in brief*

(NCJ number 184894). National Institute of Justice.

https://nij.ojp.gov/library/publications/update-cycle-violence-research-brief

Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical

Gerontology, 21*(2), 152-169. https://doi.org/10.1017/S0959259810000420

Appendix

Table 1
Participants Demographics

	N (%)
Gender	
Female	82 (76.6%)
Male	23 (21.5%)
Non-binary/third gender	1 (0.9%)
Prefer not to say	1 (0.9%)
Age Range	
18 – 24	84 (78.5%)
25 – 34	14 (13.1%)
35 – 44	5 (4.7%)
45 – 54	4 (3.7%)
Race/Ethnicity	
White or Caucasian	37 (34.6%)
Black or African American	23 (21.5%)
American Indian or Native American	3 (2.8%)
Asian	9 (8.4%)
Native Hawaiian or Other Pacific Islander	2 (1.9%)
Other	31 (29.0%)
Prefer not to say	2 (1.9%)
Marital Status	
Married	4 (3.7%)
Living with a partner	9 (8.4%)
Divorced/separated	3 (2.8%)
Never been married	91 (85.0%)
Education Level	
High School Diploma or GED	37 (34.6%)
Some college, but no degree	48 (44.9%)
Associates or technical degree	21 (19.6%)
Prefer not to say	1 (0.9%)
Employment Status	
Working full-time	20 (18.7%)
Working part-time	44 (41.1%)
Unemployed and looking for work	5 (4.7%)
A homemaker or stay-at-home parent	2 (1.9%)
Student	33 (30.8%)
Other	3 (2.8%)

Household Income
Less than $25,000   30 (28.0%)
$25,000 - $49,999   16 (15.0%)
$50,000 - $74,999   15 (14.0%)
$75,000 - $99,999   7 (6.5%)
$100,000 - $149,999   5 (4.7%)
$150,000 or more   8 (7.5%)
Prefer not to say   26 (24.3%)

Psychological or Psychiatric Services
Psychiatric services   7 (6.5%)
Psychotherapy   10 (9.3%)
Both psychiatric services and psychotherapy   17 (15.9%)
None   73 (68.2%)

Mental Illness
Depression   13 (12.1%)
Anxiety   15 (14.0%)
Bipolar   3 (2.8%)
Post-traumatic stress disorder   1 (0.9%)
None/N/A   57 (53.3%)
Other   4 (3.7%)
I was never informed of my diagnosis   14 (13.1%)

Psychotropic Medication
Yes   16 (15.0%)
No   38 (35.5%)
Does not apply   53 (49.5%)

Arrested and Booked
Yes   4 (3.7%)
No   103 (96.3%)

Time in Corrections Institution
Yes   1 (0.9%)
No   106 (99.1%)

Table 2

Number of Participants Exposed to ACEs

Types of ACEs	N	Percentage
1. Verbal or Emotional Abuse	55	51.4%
2. Physical Abuse	39	36.4%
3. Sexual Abuse	24	22.4%
4. Emotional Neglect	43	40.2%
5. Physical Neglect	12	11.2%
6. Parental Separation/Divorce	48	44.9%
7. Domestic Violence	22	20.6%
8. Substance Use in Household	36	33.6%
9. Mental Illness in Household	27	25.2%
10. Incarcerated Household Member	17	15.9%

Table 3

Levels of Social Desirability among Participants

Social Desirability Level	*N*	Percentage
Low	4	3.7%
Average	65	60.7%
High	38	35.5%
Total	107	100%

Table 4

Independent Samples t-Test Results Comparing Low and High ACE Groups

Variable	Group	*M*	*SD*	*t*	*df*	*p*	*d*
COPE Maladaptive Coping	Low	19.69	6.42	-2.41	105	.018	-0.50
	High	22.89	6.45				
Self-Distraction	Low	4.63	1.84	-2.43	105	.017	-0.50
	High	5.54	1.82				
Venting	Low	3.26	1.41	-2.45	105	.017	-0.52
	High	4.03	1.56				
Denial	Low	2.78	1.45	-0.56	105	.574	-0.12
	High	2.94	1.37				
SUS	Low	2.38	1.18	-1.06	105	.291	-0.22
	High	2.66	1.49				
Behavioral Disengagement	Low	2.72	1.12	-1.92	105	.058	-0.40
	High	3.23	1.57				
CERQ Maladaptive Coping	Low	18.00	7.23	-1.31	105	.193	-0.27
	High	19.94	7.12				
CERQ Self-Blame	Low	4.76	2.61	0.61	105	.546	0.13
	High	4.46	2.12				
CERQ Rumination	Low	5.15	2.28	-1.02	105	.311	-0.21
	High	5.63	2.25				
CERQ Catastrophizing	Low	4.58	2.57	-1.13	105	.261	-0.23
	High	5.20	2.81				
CERQ Other-Blame	Low	3.50	1.75	-2.87	105	.005	-0.59
	High	4.66	2.33				

Table 5

ANCOVA Results for COPE Maladaptive Coping and CERQ Maladaptive Coping

COPE Maladaptive Coping

Source	SS	df	MS	F	p	Partial η2
Corrected Model	342.63	4	85.66	2.06	.091	.075
Intercept	2217.26	1	2217.26	53.39	<.001	.344
Q1	81.62	1	81.62	1.97	.164	.019
Q2	12.20	1	12.20	0.29	.589	.003
Q7	24.56	1	24.56	0.59	.444	.006
ACE Groups	228.69	1	228.69	5.51	.021	.051
Error	4236.04	102	41.53			
Total	50597.00	107				
Corrected Total	4578.67	106				

Descriptive Statistics for COPE Maladaptive Coping

Group	M	SD	N
Low	19.69	6.42	72
High	22.89	6.45	35
Total	20.74	6.57	107

CERQ Maladaptive Coping

Source	SS	df	MS	F	p	Partial η2
Corrected Model	145.60	4	36.40	0.69	.600	.026
Intercept	1855.56	1	1855.56	35.21	<.001	.257
Q1 (Age)	15.01	1	15.01	0.29	.595	.003
Q2 (Gender)	1.76	1	1.76	0.03	.855	.000
Q7 (SES)	47.52	1	47.52	0.90	.345	.009
ACE Groups	79.16	1	79.16	1.50	.223	.015
Error	5375.18	102	52.70			
Total	42680.00	107				
Corrected Total	5520.79	106				

Descriptive Statistics for CERQ Maladaptive Coping

Group	M	SD	N
Low	18.00	7.23	72
High	19.94	7.12	35
Total	18.64	7.22	107

Table 6

Hierarchical Regression Analysis Predicting DSM-5 Symptoms

Predictor	B	SE B	β	t	p	95% CI (Lower)	95% CI (Upper)
Constant	7.872	7.439		1.058	.292	-6.882	22.625
High and Low ACE Group	7.934	3.197	.235	2.482	.015	1.593	14.274
Age	-3.314	2.041	-.154	-1.623	.108	-7.363	.735
Gender	4.629	2.856	.154	1.621	.108	-1.035	10.293

Model Summary

R	R²	Adjusted R²	SE of Estimate
.312	.097	.071	15.322

ANOVA

Source	SS	df	MS	F	p
Regression	2601.498	3	867.166	3.694	.014
Residual	24181.567	103	234.772		
Total	26783.065	106			

Table 7

Hierarchical Regression Results Predicting DSM-5 Symptoms

Model Summary

Model	R	R²	Adjusted R²	Std. Error of the Estimate	ΔR²	F Change	df1	df2	Sig. F Change
1	.208	.043	.025	15.70	.043	2.345	2	104	.101
2	.508	.258	.221	14.03	.215	9.736	3	101	$< .001$
3	.544	.296	.246	13.80	.038	2.685	2	99	.073

ANOVA for Hierarchical Regression Models

Model	Source	SS	df	MS	F	p
1	Regression	1,155.75	2	577.88	2.345	.101
	Residual	25,627.31	104	246.42		
	Total	26,783.07	106			
2	Regression	6,904.22	5	1,380.85	7.016	$< .001$
	Residual	19,878.84	101	196.82		
	Total	26,783.07	106			
3	Regression	7,926.88	7	1,132.41	5.945	$< .001$
	Residual	18,856.19	99	190.47		
	Total	26,783.07	106			

Hierarchical Regression Coefficients Predicting DSM-5 Symptom Severity

Predictor	B	SE B	β	t	p	95% CI LL	95% CI UL
Model 1							
Intercept	15.81	6.88	—	2.30	.024	2.17	29.46
Age	-2.81	2.08	-.13	-1.35	.180	-6.93	1.32
Gender Identity	5.40	2.91	.18	1.86	.066	-0.37	11.17
Model 2							
Intercept	2.60	7.64	—	0.34	.734	-12.56	17.75
Age	-4.24	1.89	-.20	-2.24	.027	-8.00	-0.49
Gender Identity	4.37	2.61	.15	1.68	.097	-0.81	9.55
Total ACEs	1.93	0.55	.32	3.49	$<.001$	0.83	3.03
COPE Adaptive Coping	0.40	0.17	.29	2.38	.019	0.07	0.73
CERQ Adaptive Coping	-0.07	0.20	-.04	-0.35	.729	-0.46	0.33
Model 3							
Intercept	-6.57	8.62	—	-0.76	.448	-23.67	10.54
Age	-4.61	1.87	-.22	-2.47	.015	-8.33	-0.90
Gender Identity	3.84	2.59	.13	1.49	.141	-1.29	8.98

Total ACEs	7.33	2.45	1.21	2.99	.004	2.47	12.19
COPE Adaptive Coping	0.46	0.25	.34	1.84	.069	-0.04	0.96
CERQ Adaptive Coping	0.21	0.30	.13	0.71	.482	-0.38	0.80
ACE × COPE Adaptive Coping	-0.04	0.06	-.26	-0.58	.563	-0.16	0.09
ACE × CERQ Adaptive Coping	-0.12	0.08	-.72	-1.60	.114	-0.28	0.03

Table 8

Regression Analysis Predicting Total Resilience

Predictor	B	SE	β	t	p	95% CI (Lower)	95% CI (Upper)
(Constant)	112.41	12.64	—	8.90	<.001	87.34	137.47
COPE Adaptive Coping	0.53	0.28	0.25	1.94	.056	-0.01	1.08
CERQ Adaptive Coping	0.27	0.33	0.11	0.83	.411	-0.38	0.92
Total ACEs	-3.27	0.91	-0.34	-3.57	<.001	-5.08	-1.45
Age	5.84	3.13	0.17	1.87	.065	-0.36	12.05
Gender	-3.10	4.32	-0.07	-0.72	.475	-11.66	5.47

Model Summary

R	R²	Adjusted R²	SE of Estimate	F	p
.43	.18	.14	23.203	4.49	<.001