

Use Authorization

In presenting this thesis in partial fulfillment of the requirements for an advanced degree at Idaho State University, I agree that the Library shall make it freely available for inspection. I further state that permission for extensive copying of my thesis for scholarly purposes may be granted by the Dean of the Graduate School, Dean of my academic division, or by the University Librarian. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Signature _____

Date _____

Racial Differences in Adverse Childhood Experiences, Coping Styles, and Resilience

by

Madisen Julia Hillebrant-Openshaw

A dissertation

submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy in the Department of Psychology

Idaho State University

December 2023

Committee Approval

To the Graduate Faculty:

The members of the committee appointed to examine the dissertation of Madisen Julia Hillebrant-Openshaw find it satisfactory and recommend that it be accepted.

Dr. Maria Wong,
Major Advisor

Dr. Shannon Lynch,
Committee Member

Dr. Henry Evans,
Committee Member

Dr. Jennifer McDonald,
Committee Member

Dr. Alan Johnson,
Graduate Faculty Representative

Human Subjects Committee Approval

September 27, 2022

Madisen Hillebrant-Openshaw
Psychology
MS 8112

RE: Study Number IRB-FY2023-34: Adversity, Coping, and Resilience

Dear Ms. Hillebrant-Openshaw:

I have reviewed your request for expedited approval of the new study listed above. This is to confirm that I have approved your application.

Notify the HSC of any adverse events. Serious, unexpected adverse events must be reported in writing within 10 business days.

You may conduct your study as described in your application effective immediately. This study is not subject to renewal under current OHRP (DHHS) guidelines.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Tom Bailey (208-282-2179; email humsubj@isu.edu) if you have any questions or require further information.

Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

Acknowledgments

I want to first show my appreciation for my dog Luna who passed away during my completion of this dissertation. She spent many long hours with me at my desk working on this project and always supported me unconditionally (maybe a little less when she hadn't been taken for a walk that day).

Second, I want to express my immense appreciation towards my partner Jeremy. He has been my rock throughout graduate school. He was always willing to help me work through difficult problems and has only ever been patient, kind, and supportive through this process.

Third, I want to thank my mentor Maria for all she has done for me. Maria provided so much of her time and knowledge to help me progress toward my goals. I'm happy to call her my graduate mentor and my friend.

Lastly, I would like to thank a number of people who have supported me in my success in graduate school. This includes my dissertation committee, who donated their time to help me complete this project; my parents who have cheered me on during this process; my grandma who passed away during the completion of this dissertation; and my friends who were always there to admire birds and plants when I needed a break from writing.

Thank you all.

Table of Contents

List of Figures	vii
List of Tables	ix
Abstract	x
Background	1
ACEs and Resilience	1
Coping Style as a Mediator of the Relationship Between ACEs and Resilience	3
Race as a Moderator of the Relationship Between ACEs and Resilience	4
Race as a Moderator of the Relationship Between ACEs and Coping Style.....	6
Race as a Moderator of the Relationship Between Coping Style and Resilience.....	9
Current study.....	12
Specific Aims.....	12
Methods	14
Participants.....	14
Power Analysis	15
Measures	15
ACEs	15
Coping Styles	15
Resilience	16
Demographics and Covariates	18
Validity Checks.....	19
Procedure	20
Results.....	20

Preliminary Analyses	24
Racial Differences.....	32
Mediations	33
Measurement Model	33
Structural Models.....	34
Emotion-focused Coping as a Mediator.	35
Problem-focused Coping as a Mediator.....	36
Religious Coping as a Mediator.....	37
Avoidant Coping as a Mediator.	38
Vigilant Coping as a Mediator.....	39
Moderations	40
ACEs, Emotion-focused Coping, and Resilience	41
ACEs, Problem-focused Coping, and Resilience	41
ACEs, Religious Coping, and Resilience	42
ACEs, Avoidant Coping, and Resilience	42
ACEs, Vigilant Coping, and Resilience.....	43
Discussion.....	46
Aim 1a.....	46
Aim 1b	47
Aim 1c.....	50
Aim 2	52
Aim 3	54
Aim 4	57

Aim 5	60
Limitations	62
Conclusions.....	63
References.....	65
Appendix A - Measures	79

List of Figures

Figure 1 Measurement Model	34
Figure 2 Emotion-focused Coping Mediation Model.....	35
Figure 3 Problem-focused Coping Mediation Model	36
Figure 4 Religious Coping Mediation Model	37
Figure 5 Avoidant Coping Mediation Model.....	38
Figure 6 Vigilant Coping Mediation Model	39
Figure 7 Race Moderated the Relationship between ACEs and Avoidant Coping	43
Figure 8 Race Moderated the Relationship between ACEs and Vigilant Coping	45

List of Tables

Table 1 Demographics	21
Table 2 Differences Between Participants Who Completed T1 Only and Those Who Completed T1 and T2	23
Table 3 Main Variable Information	25
Table 4 Missing Data	27
Table 5 Zero Order Correlations Between Demographics and Main Variables	29
Table 6 Zero Order Correlations Between Main Variables	31
Table 7 Correlations Between Race and Major Variables	32

Racial Differences in Adverse Childhood Experiences, Coping Styles, and Resilience
Dissertation Abstract—Idaho State University (2023)

Adverse childhood experiences (ACEs) put individuals at risk of suffering many negative outcomes and individuals cope with these experiences in different ways. There is evidence that Black and White individuals cope with stressful events differently, but we do not yet fully understand if certain coping styles can explain why individuals of diverse racial groups are resilient to ACEs. The current study aimed to expand the field's knowledge of racial differences in ACEs, coping styles, and resilience, while also conducting analyses on the mediating role of coping styles on the relationship between ACEs and resilience in Black and White individuals. Black and White participants were recruited for an online longitudinal study. Participants filled out questionnaires measuring ACEs, coping styles, and resilience at two time points. Racial differences were analyzed. Results indicated that Black participants utilized more religious, emotion-focused, and problem-focused coping compared to White individuals. Further, Black participants reported higher psychological wellbeing and lower satisfaction with life than White participants. Avoidant and vigilant coping mediated the relationship between ACEs and resilience. Lastly, Race moderated the *a* path of both of these mediation models. The implications of these findings on prevention and intervention programs for individuals with ACEs are discussed.

Key words: Adverse Childhood Experiences, Resilience, Coping, Race

Background

It is well known that adverse childhood experiences (ACEs) put individuals at risk of negative outcomes such as chronic health conditions, low psychological wellbeing, low social well-being, and low life satisfaction (Downey et al., 2017; Felitti et al., 1998; Mosley-Johnson et al., 2019; Nurius et al., 2015). However, some racial groups may experience more ACEs than others, which puts them at a higher risk of experiencing negative outcomes. Additionally, individuals in specific racial groups may cope with these stressful experiences in different ways, further impacting their potential to experience negative or positive outcomes. Exploring these racial differences is important because our existing knowledge is mainly based on WEIRD (White, Educated, Industrialized, Rich, Democratic) samples. Studying diverse samples may help us understand how individuals who are not typically represented in previous studies become resilient to ACEs, and how to protect those with ACEs against a high likelihood of developing negative outcomes. Further, it is important to understand that some individuals may benefit from certain behavioral strategies more than others, and research that examines racial similarities and differences in coping styles may help guide interventions across racial groups.

ACEs and Resilience

Adverse childhood experiences are events of adversity that an individual has experienced prior to the age of 18 years old. There are many events that can be considered adverse in a child's life. Common ACE measures specifically capture adversities within the home and include physical, sexual, or emotional abuse, parental divorce, and exposure to a family member with a mental health disorder or a history of incarceration (Center for Disease Control and Prevention, 2009). ACEs are well documented within the current psychological literature and have commonly been found to be associated with negative outcomes. For example, individuals with

ACEs tend to have lower psychological and social well-being, life satisfaction, and physical health compared to individuals who have never experienced ACEs (Monnat & Faye Chandler, 2015; Mosley-Johnson et al., 2019). Due to the well-documented relationship between ACEs and negative outcomes, it is important to understand how individuals may become resilient to ACEs to help prevent the high likelihood that individuals with ACEs experience negative outcomes.

Resilience refers to one's ability to positively adapt after experiencing adverse events (Luthar et al., 2000; Mosley-Johnson et al., 2019). Although individuals who have experienced ACEs have a high likelihood of experiencing negative outcomes, resilient individuals experience positive outcomes and fewer negative outcomes despite experiencing ACEs. Therefore, an individual would be considered resilient to ACEs if they show higher scores on psychological wellbeing, social well-being, life satisfaction, and physical health than what would normally be expected for individuals with ACEs. Therefore, it is important to consider these variables as resilience indicators.

A number of variables have been shown to explain the relationship between ACEs and resilience (Conway et al., 2020; Kentner et al., 2019; Sengutta et al., 2019), but more information is needed on additional mediators of this relationship. One variable that may act as a mediator of the relationship between ACEs and resilience is coping style. Coping is an emotional and behavioral regulatory process that allows individuals to respond to stressful situations (Skinner & Zimmer-Gembeck, 2007). When individuals experience stressful situations, we see variability in how each individual copes with the situation. The behavior that one commonly applies to deal with new and stressful situations is termed a "coping style" (Beutler et al., 2011). The coping style that one regularly uses to deal with stressful situations can impact their resilience to ACEs, making coping style a variable that may explain the relationship between ACEs and resilience.

Coping Style as a Mediator of the Relationship Between ACEs and Resilience

Currently, there are few studies that analyze coping style as a mediator of the relationship between ACEs and resilience. Sheffler and colleagues (2019) conducted a longitudinal study in which they analyzed ACEs at time 1 and psychiatric and physical health approximately 19 years later (T1: $N = 7108$; 5.2% Black, 90.7% White). The researchers measured coping styles 10 years after time 1 and found that certain coping styles longitudinally mediated the relationship between ACEs and health outcomes. The findings indicated that the use of avoidant/emotion-focused coping styles could help explain why individuals with ACEs tended to be less resilient and experience more psychiatric and physical health deficits. The researchers did not find a mediated effect of problem-focused coping on the relationship between ACEs and psychiatric and physical health, suggesting that certain coping styles may not help explain the relationship between ACEs and resilience.

Further, Solberg and colleagues (2023) analyzed the mediated effects of adaptive and disengaged coping on the relationship between ACEs and BMI, depression, anxiety, stress, and substance use in young adults cross-sectionally ($N = 200$; 50% Black, 50% White). The researchers found that disengaged coping mediated the relationship between ACEs and mental health, smoking, and substance use. However, they did not find a significant mediation of adaptive coping on the relationship between ACEs and mental health, smoking, or substance use.

Although these studies provide pertinent information to our understanding of ACEs, coping styles, and resilience; to this researcher's knowledge, they are the only studies of their kind. Additionally, these researchers did not analyze differences in coping styles between races, nor the moderating effect of race on each path of these mediation models. In fact, all paths of this model have been understudied in the current psychological literature especially when

considering race as a moderator of each path. Therefore, more studies are needed to expand our understanding of this mediation model, and how racial groups may be different on each path of this model.

Race as a Moderator of the Relationship Between ACEs and Resilience

Racial differences in ACEs have been well documented in prior literature. Mersky and colleagues (2021) conducted a study using the National Longitudinal Study of Adolescent to Adult Health ($N = 13,718$; 22% Black, 55.3% White) which measured ACEs through parent and child reports and found that Black individuals experienced more ACEs on average than White individuals. Additional studies support this finding. For example, a Child Trends research brief used data from the 2016 National Survey of Children's Health in which parents reported their children's ACEs from birth through the age of 17 ($N = 50,212$). This brief indicated that 61% of Black individuals and 40% of White individuals had experienced one or more ACEs and that Black individuals had a higher prevalence of six out of the eight adversities measured in comparison to White individuals (Sacks & Murphey, 2018).

Zhang and Monnat (2022) found similar results when using data from the Fragile Families and Child Well-being Study in which ACEs were measured by parent reports when their children were 9 years old ($N = 2849$; 51.9% Black, 22.1% White). The results showed that Black children tended to experience more ACEs than White children even at a young age. Moreover, Black children in the study had a higher likelihood of experiencing parental incarceration and divorce (Zhang & Monnat, 2022).

The data from these studies are indicative of substantial racial differences in experiences of adversity in childhood. As ACEs are commonly associated with negative outcomes, and Black individuals have a higher likelihood of experiencing ACEs, Black individuals may be at a higher

risk of developing negative outcomes compared to White individuals. Indeed, many empirical studies using nationally representative samples have found that Black individuals have a higher likelihood of experiencing negative outcomes such as lower life expectancy, heart disease, illicit drug use, etc. (Kochanek et al., 2013; National Academies of Sciences, Engineering, and Medicine, 2017; Center for Behavioral Health Statistics and Quality, 2021). However, there is some evidence that racial groups fare differently after experiencing ACEs. For example, Youssef and colleagues (2017) used data from 413 (53.5% Black, 46.5% White) participants in the southeastern United States to determine if there were racial differences in the relationship between number of ACEs and depressive symptoms. Participants were administered an ACE questionnaire and the Beck Depression Inventory at the age of 19. Results showed a significant interaction between race and ACEs on depressive symptoms. African Americans had lower levels of depression when they had experienced fewer than five ACEs compared to White individuals. However, both racial groups had similar levels of depression if they had experienced five or more ACEs (Youssef et al., 2017).

Another study by LaBrenz and collaborators (2019; $N = 26,020$; 74.4% White) conducted a similar analysis and expanded on Youssef and colleagues' findings by analyzing the moderating role of race on the relationship between ACEs and mental and physical health. The researchers used data from the 2010 Behavioral Risk Factor Surveillance System which gathered information about mental health, physical health, and ACEs in a nationally representative sample of adolescents. Results showed a significant interaction between race and ACEs on mental health, but the interaction was somewhat contradictory to the findings by Youssef et al. (2017). LeBrenz and collaborators (2019) found that Black and White individuals had similarly few days hindered by mental health problems if they had no ACEs, but Black individuals experienced

more days hindered by mental health problems if they had 5 or more ACEs compared to White individuals (LaBrenz et al., 2019). The results did not indicate a significant interaction between race and ACEs on physical health (LaBrenz et al., 2019).

Further, Goldstein and her collaborators (2020) studied ACEs, race, and child flourishing, a variable used by the researchers to describe a child's well-being, by using the National Survey of Children's Health dataset ($N = 44,686$; 7.1% Black, 80.1% White). The researchers found a moderating role of race on the relationship between ACEs and child flourishing. As ACEs increased, White children had a greater decline in child flourishing measures of "curiosity in learning new things" and "finishing tasks" compared to Black children (Goldstein et al., 2020).

These studies provide pertinent information about racial differences in the relationship between ACEs and resilience, but additional studies are needed to help solidify our understanding of the moderating role of race in the relationship between ACEs and resilience as the current literature shows some contradictory findings. Further, more information is needed on variables such as coping styles to help explain why these relationships occur. Information on coping styles may allow us to gain a better understanding of why racial groups differentially experience resilience after ACEs and may inform prevention and intervention programs for those who suffer from ACEs.

Race as a Moderator of the Relationship Between ACEs and Coping Style

Individuals with more ACEs have been found to have more difficulty coping with certain situations. For example, Shah and colleagues (2018) conducted a study on 671 parents (27.3% Black, 60.2% White) whose children were hospitalized to determine how each of these parents would cope after their children were discharged, while also considering the number of ACEs that the parents reported. Parents completed the ACE questionnaire, along with the Post-Discharge

Coping Difficulty Scale which measured parental levels of stress and ability to manage stressful situations after their children were discharged from the hospital. The researchers found that parents generally had a more difficult time coping after their children were discharged if the parent reported a higher number of ACEs (Shah et al., 2018).

Although information about general coping ability is important, individuals can cope with stressful situations in many different ways. Coping styles come in many forms and specific types of coping styles tend to be associated with specific outcomes, making coping style an important variable of study because it may promote or hinder resilience.

For example, avoidance, emotion-focused, and problem-focused coping styles are commonly analyzed within the psychological literature (Green et al., 2010; Holahan et al., 2005; Schoenmakers et al., 2015; Yoon et al., 2018). Emotion-focused coping is a coping style in which the individual attempts to reduce negative emotions that occur during stressful events (Schoenmakers et al., 2015). Avoidance coping is a coping style in which the individual tries to avoid or withdraw from a stressful situation (Van Gundy et al., 2015). Lastly, problem-focused coping is a coping style in which the individual will approach a stressful situation and use problem-solving skills to reduce the effects of the stressor (Van Gundy et al., 2015). Sheffler and colleagues (2019) used the Midlife Development in the United States Survey and found that among 3294 participants (5.2% Black, 90.7% White), those who reported more ACEs at time 1 had a higher likelihood of using avoidant/emotion-focused coping compared to problem-focused coping 10 years later. However, no racial differences in coping styles across the whole sample were reported.

Differences in utilization of these coping styles have been found between racial groups in other studies. For example, Van Gundy and colleagues (2015) administered 6 items from the

Carver COPE index to 887 young adults in Florida (48% Black, 52% White). The researchers found that Black individuals were more likely to use avoidance coping and were less likely to use problem-focused coping compared to White individuals (Van Gundy et al., 2015). Further, Reynolds et al. (2000) used data from the National Cancer Institute's Black/White Cancer Survival Study and found that Black breast cancer patients were more likely to use emotion-focused coping than White breast cancer patients. Although these three coping styles are commonly analyzed and have been shown to be related to many different variables including race and ACEs, there are additional coping styles that are not as often considered but may be of particular importance to specific racial groups.

The development of coping styles depends on a number of factors, one of which is socialization. Children are surrounded by specific individuals and contexts in which they learn to behave in socially appropriate ways (Skinner & Zimmer-Gembeck, 2007). As children grow they tend to adopt coping styles that are used in the social contexts that surround them (Skinner & Zimmer-Gembeck, 2007). This context-dependent development of coping styles is likely one reason why some research has found that different racial groups utilize different coping styles.

Chapman and Mullis (2000) conducted a study on 361 adolescents between grades 7-12 in the Southern U.S. (68% Black, 32% White). The researchers used the Adolescent Coping Orientation for Problem Experiences measure to determine which coping styles participants utilized. Their results showed that African American adolescents were more likely to seek out spiritual support to cope with difficult circumstances compared to White adolescents (Chapman & Mullis, 2000).

Gemmel and colleagues (2016) expanded this information by analyzing a similar coping style in 182 individuals (24.1% Black, 71.6% White) living with kidney disease and being

treated at the University of Pittsburgh Medical Center. The participants completed the Brief COPE measure to determine utilization of coping style. The results indicated that Black participants were more likely to use religious coping, a coping style in which the individual seeks out religious practices to deal with stress (Aflakseir & Mahdiyar, 2016), compared to White participants (Gemmell et al., 2016).

Additionally, LaVeist and colleagues (2014) used the Exploring Health Disparities in Integrated Communities database in which individuals ($N = 718$; 38.4% Black, 61.6% White) were administered the Vigilance Anticipatory Coping Scale. The researchers found that Black participants had a higher likelihood of using vigilant coping, a coping style in which the individual is highly attentive to their surroundings to better allow them to anticipate a potential threat and prepare themselves for it, compared to White participants (LaVeist et al., 2014).

As the current literature demonstrates, coping styles tend to depend on the number of ACEs one has been exposed to, and Black and White individuals tend to use different coping styles when experiencing stressors. However, the current literature in these areas is scarce. Further, no studies have attempted to consider racial differences/similarities in ACEs and coping styles simultaneously or to analyze the moderating role of race on the relationships between ACEs and coping styles. The current study attempts to fill this gap in our knowledge.

Race as a Moderator of the Relationship Between Coping Style and Resilience

As there is evidence that ACEs are associated with certain coping styles, it is important to understand how coping styles might also be related to resilience. Generally, we find that specific coping styles tend to be related to specific outcomes. For example, Milas and colleagues (2021) studied the relationship between stress, coping style, and life satisfaction in adolescent and young adult participants in Croatia ($N = 1830$, ages 17-22). The researchers measured coping

styles with the Coping Across Situations Questionnaire, and life satisfaction with a single Likert scale item which asked, “All things considered, how satisfied are you with your life as a whole?”. Results indicated that participants who most often used a withdrawal coping style, a type of coping similar to avoidant coping, were more likely to indicate low scores on life satisfaction (Milas et al., 2021).

Further, problem-focused coping has been shown to be associated with well-being. A 2015 study by Mayordomo-Rodríguez and colleagues used the Coping Strategies Questionnaire and the Ryff’s Psychological Well-being Questionnaire to measure coping styles and well-being respectively in 405 university students in Spain. The use of problem-focused coping predicted higher ratings of well-being, and emotion-focused coping predicted lower ratings of well-being in the participants (Mayordomo-Rodríguez et al. 2021).

Alonso-Tapia and colleagues (2019) collected data from 430 participants in Spain with different adversities, such as cancer patients, parents of children with cancer, and individuals from the general population. The participants completed the Situated Subjective Resilience Questionnaire for Adults, the Resiliency Questionnaire for Adults, and the Situated Coping Questionnaire for Adults. The results indicated that the utilization of emotion-focused coping predicted lower scores on a number of different measures of resilience including total resilience, resilience in situations related to work, relationships with someone close to the participant, dealing with the participant’s own health, and dealing with the health of someone close to the participant. Utilization of problem-focused coping positively predicted total resilience, resilience in situations related to work, dealing with one’s own health, and dealing with the health of a loved one (Alonso-Tapia and colleagues, 2019).

Leipold and his collaborators (2019) expanded on the above results by recruiting participants in Germany and having them fill out measures that captured multiple coping styles and their relations with well-being. The researchers found that problem-focused coping was positively related to the well-being of participants (Leipold et al., 2019).

As the above studies indicate, problem-focused coping has been found to be more protective than emotion-focused and avoidant coping styles, but these studies tend to focus on WEIRD samples. Therefore, it is currently unclear whether these results remain consistent in samples that are not represented in these studies. Although research shows that certain coping styles are more protective than others, it is important to consider how useful these different coping styles are at protecting each racial group from low resilience due to ACEs. Currently, there is some research showing that coping styles can differentially impact the outcomes of Black and White individuals. For example, Van Gundy and colleagues (2015) found that Black participants were more likely to use avoidance coping compared to White participants, and this decreased the likelihood of having a marijuana use disorder in Black participants but increased the likelihood of the disorder in White participants. Additionally, LaVeist et al (2014) found that Black participants were more likely to use vigilant coping, and vigilant coping was related to higher rates of depression. However, White participants were still more likely to report depression symptoms compared to Black participants. Additionally, after controlling for vigilant coping, the difference in depression between Black and White participants increased (LaVeist et al., 2014).

These studies indicate the importance of analyzing racial differences in coping styles, as specific coping styles may be more or less protective for certain racial groups. The studies described above provide critical information on the use of coping styles in different racial

groups, and their relation to negative and positive outcomes. However, studies examining racial differences in the relationships between coping styles and resilience are limited, and more research is needed to gain a better understanding of these relationships.

Current study

The current literature provides evidence that ACEs, coping styles, and resilience are related, and existing research suggests that coping styles may mediate the relationship between ACEs and resilience. However, there is limited research on racial differences in ACEs, coping styles, and resilience and how these variables may be related to one another. Therefore, the current study analyzed the mediating role of coping styles (avoidant, emotion-focused, problem-focused, religious, vigilant) on the relationship between ACEs and resilience, and further tested for differences between Black and White individuals on relationships within this model. Specific aims and hypotheses were as follows:

Specific Aims

Aim 1. Examine racial differences in ACEs, coping styles, and resilience.

- Aim 1a. Compare Black and White participants on rate of ACEs.
 - It was expected that Black participants would report more ACEs than White participants.
- Aim 1b. Compare Black and White participants on prevalence of coping styles.
 - It was expected that Black participants would report using more avoidant, emotion-focused, vigilant, and religious, and less problem-focused coping than White participants.
- Aim 1c. Compare Black and White participants on variability of and average resilience.

- It was expected that Black participants would report poorer health than White participants, but the literature was inconsistent in supporting a hypothesis for the remaining resilience variables.

Aim 2. Examine the relationship between ACEs and coping style.

- It was expected that individuals with more ACEs would be more likely to use avoidant and emotion-focused coping, and less likely to use problem-focused coping. There was not enough literature to support predictions for relationships between ACEs and vigilant or religious coping.

Aim 3. Examine the relationship between coping style and resilience controlling for ACEs.

- It was expected that controlling for ACEs, individuals who use avoidant, and emotion-focused coping, would be less resilient, and individuals who use problem-focused coping would show higher resilience. There was not enough literature to support predictions for relationships between vigilant coping and resilience, and the literature on religious coping and resilience was somewhat contradictory which reduced confidence in a specific hypothesis.

Aim 4. Examine whether and how coping style mediates the relationship between ACEs and resilience.

- It was expected that avoidant, emotion-focused, and problem-focused coping styles would mediate the relationship between ACEs and resilience such that a higher number of ACEs would result in a higher likelihood of avoidant and emotion-focused coping, as well as a lower likelihood of problem-focused coping, which would lead to lower resilience. There was not enough evidence to support a hypothesized mediation of

vigilant and religious coping on the relationship between ACEs and resilience, so these relationships were conducted as exploratory analyses.

Aim 5. Examine whether race moderates the mediating effect of coping styles on the relationship between ACEs and resilience.

- Analyses in this aim were exploratory as there was not enough evidence to suggest specific hypotheses.
- Aim 5a. Test whether and how race moderates the relationship between ACEs and coping styles.
- Aim 5b. Test whether and how race moderates the relationship between coping styles and resilience.
- Aim 5c. Test whether and how race moderates the relationship between ACEs and resilience.

Methods

Participants

Individuals aged 18 and older were recruited via Mechanical Turk. Participants were required to have the ability to read and write English at least at a 6th-grade level and be residing in the United States. Participants were screened for race. Race refers to physical characteristics that are culturally significant (American Psychological Association, 2020). This study focused on racially Black and White individuals. Black refers to those of African origin as well as origins such as Jamaica, or the Bahamas, etc., and White refers to those of European origin (American Psychological Association, 2020). Individuals identifying as racially Black or White were included in the study and those not identifying as these races were excluded. A total of 548 participants completed the study at time 1. These participants had an average age of 41(12.2)

years, with the majority of participants being female, identifying as straight, and having some form of college degree. Participant information can be found in Table 1.

Power Analysis

Structural equation modeling was used to analyze the data. Therefore, sample size was determined using power estimates from MacCallum et al. (1996). It was expected that there would be approximately 50 degrees of freedom (Hillebrant-Openshaw & Wong, 2022). To do a test of close fit (i.e., to differentiate between a model that fits the data well and a model that does not fit the data), 300 participants were needed to have enough statistical power ($\geq .80$) to analyze the data. To account for attrition, 548 participants were collected at time 1 to ensure enough power to analyze the data at time 2 in which a final sample of 344 was obtained.

Measures

ACEs

ACEs were measured using the Behavioral Risk Factor Surveillance System (BRFSS) Behavioral Adverse Childhood Experience Module (Center for Disease Control and Prevention, 2009). The measure included 11 questions pertaining to the adversities that participants have experienced prior to the age of 18 including experiences of physical, sexual, or emotional abuse, parental divorce, exposure to someone with a mental health disorder, or to those with a history of incarceration. Questions asked either if the participant has experienced the adversity, or how often the adversity was experienced. Responses were given as, *yes*, or *no*; or in the cases of questions referring to frequency, *never*, *once*, or *more than once*. Scores were summed with higher scores indicating more experienced adversities. This scale had a Cronbach's $\alpha = .77$.

Coping Styles

To measure coping styles, two questionnaires were used. First, the Brief Cope (Carver, 1997) was used to measure avoidant, emotion-focused, problem-focused, and religious coping styles. This measure included 28 items referring to how participants cope with stressors and included items such as ("I've been getting emotional support from others") and ("I've been looking for something good in what is happening"). Responses were given on a four-point Likert-type scale with responses ranging from, *I usually don't do this at all* (1), to *I usually do this a lot* (4). 17 different coping styles could be calculated from the scale, but the current study only used the measure to calculate avoidant (total score range 8-32; $\alpha = .76$), emotion-focused (total score range 12-48; $\alpha = .65$), problem-focused (total score range 8-32; $\alpha = .84$), and religious coping (total score range 2-8; $\alpha = .88$) styles. Larger scores indicated a greater use of each coping style.

Second, the Vigilant Coping Scale (Clark et al., 2006) was used to measure levels of vigilant coping. This measure included six questions referring to vigilant behaviors exhibited in response to stressful situations such as ("carefully observe what happens around you") and ("try to prepare for possible insults before leaving home"). Responses were on a six-point Likert's type scale ranging from *almost every day* (1), to *never* (6). Scores were reverse coded for easier interpretation of results in comparison to the other coping styles. Scores were summed and ranged from 6 to 36 with higher scores indicating greater use of vigilant coping. This scale had a Cronbach's $\alpha = .82$.

Resilience

Lastly, resilience was measured using four different questionnaires. First, the Ryff's Psychological Well-being Scale (Ryff, 1989) included 42 questions about psychological well-being which could be divided into six subscales measuring autonomy, environmental mastery,

personal growth, positive relations, purpose in life, and self-acceptance. Item examples included (“the demands of everyday life often get me down”) and (“I enjoy making plans for the future and working to make them a reality”). Answers were given on a six-point Likert type scale ranging from *strongly disagree* (1), to *strongly agree* (6). Scores were summed and total scores ranged from 42 to 252 with higher scores indicating higher psychological well-being. This scale had a Cronbach’s $\alpha = .94$.

Second, social well-being was measured using the Social Well-being Scale (Keyes, 1998). The questionnaire consisted of 33 questions which could be separated into 5 subscales measuring social integration, social acceptance, social contribution, social actualization, and social coherence. Items included (“you feel close to other people in your community”) and (“you think that other people are unreliable”), etc. Responses were given on a six-point Likert type scale from *strongly disagree* (1), to *strongly agree* (6). Scores were summed and ranged from 33 to 198 with higher scores indicating higher social well-being. This scale had a Cronbach’s $\alpha = .94$.

Third, the Satisfaction with Life Scale was used to measure life satisfaction (Diener et al., 1985). Participants completed five items in which they stated their level of agreement or disagreement with statements such as (“I am satisfied with my life”), and (“In most ways, my life is close to my ideal”), etc. Responses on a Likert’s type scale ranged from *strongly disagree* (1), to *strongly agree* (7). Summed scores ranged from 5 to 35 with higher scores indicating higher life satisfaction. This scale had a Cronbach’s $\alpha = .92$.

Lastly, the 36-item short form (SF-36) developed from the Medical Outcome Study was used to assess the physical health of this study’s participants (Ware & Sherbourne, 1992). This questionnaire could be split into multiple subscales. A single general health item was used in this

study which asks, (“In general, would you say your health is:”) with answers ranging from *poor* (1), to *excellent* (5) and higher scores indicating better physical health.

Demographics and Covariates

Demographic information was collected at the end of the study and included the following: age, gender, race, sexual orientation, and education. Scores were dichotomized for gender (0 = male, 1 = female), race (0 = white, 1 = black), sexual orientation (0 = not straight, 1 = straight), and covid (“Have you ever contracted covid?”, 0 = no, 1 = yes). Education was coded such that lower scores indicated less education (1 = less than a high school diploma, 7 = doctorate or equivalent).

Black individuals report higher rates of racial discrimination than White individuals (Lee et al., 2019) and racial discrimination tends to be related to some of the main variables of interest in this study (Carter et al., 2017; Hudson et al., 2016; Utsey et al., 2011). Therefore, racial discrimination was used as a covariate in this study to determine if racial differences in these variables were apparent outside of racial discrimination. The Everyday Discrimination Scale (Williams et al., 1997) was used to measure perceptions of racial discrimination. This measure included nine questions about experiences of discrimination such as, (“People act as if they are afraid of you”) and (“You are called names or insulted”). Participants answered how often they feel they experience these discriminations. Answers on each question ranged from *never* (1), to *almost every day* (6) with total scores ranging from 9-54. Additionally, participants were asked, (“What do you think is the main reason for these experiences?”) and participants selected answers such as *Your Gender*, *Your Race*, *Your Age*, *Your Weight*, etc. If the participant answered, *Your Race* to this question, their score was maintained. Otherwise, their score was set

to the lowest score of 9 indicating that they did not feel racially discriminated against. This scale had a Cronbach's $\alpha = .92$.

Validity Checks

Attention checks were placed throughout the questionnaires to ensure data quality. These checks included a Completely Automated Public Turing Test at the beginning and end of the study (CAPTCHA; Aguinis et al., 2021). Participants were not allowed to continue on to the questionnaires if they did not pass the first CAPTCHA, and were not able to fully complete the study if they could not pass the second CAPTCHA. Second, two open-ended questions were included to check for unusual responses. These questions asked, "*What influences your ability to cope?*" which was placed at the end of the coping questionnaires, and "*What do you do to influence your physical health?*" which was placed at the end of the physical health questionnaire (Chmielewski & Kucker, 2020; Aguinis et al., 2021). Further, duplicate questions to check for inconsistent responses were added. Participants responded to fill in the blank questions of "*What is your age?*" and "*What state do you reside in?*" at the beginning of the questionnaires. At the end of the questionnaires, participants responded to the questions "*What is your date of birth*" using [MM/DD/YYYY] formatting, and "*What state do you reside in?*" using a drop-down menu (Chmielewski & Kucker, 2020; Cobanoglu et al., 2021). Additionally, participants were flagged if their race was inconsistent between the race screen, T1, and T2 responses. Third, a minimum time completion rate was added, and responses were flagged if a participant completed all the questions faster than this minimum time (Chmielewski & Kucker, 2020; Cobanoglu et al., 2021). Lastly, IP addresses were checked for duplicates and flagged if multiple participants completed the study from the same IP address (Cobanoglu et al., 2021; Aguinis et al., 2021). Participants were immediately excluded if they had a duplicate IP address,

did not pass both CAPTCHAs or their race was inconsistent between responses. Further, participants were allowed to miss 1 of the additional checks before their data was excluded.

Procedure

Participants took part in the study online. They first filled out an informed consent page and then completed the questionnaires listed above. Questionnaires were counterbalanced to reduce the likelihood of order effects. Participants were debriefed and received \$1.50 for completing the questionnaires at Time 1. After 3 months had elapsed, participants were contacted and asked to complete the questionnaires a second time. Participants were debriefed and received \$4.00 for completing the questionnaires at Time 2.

Results

Demographic information is outlined in Table 1 below for a better understanding of participant demographics both in the total sample and between racial groups. Black participants were slightly younger than White participants. Black and White participants were similar on the remaining demographic characteristics (gender, sexual orientation, education). These demographics were controlled for in the main analyses. These covariates were removed from the models if they were not significantly associated with the major variables of interest.

Table 1*Demographics*

		Total T1	Black T1	White T1	Total T2	Black T2	White T2
<i>n</i>		548	274	274	344	151	193
Age <i>M(SD)</i>		38.5 (12.1)	35.9 (11.3)	41.0 (12.2)	40.4 (12.4)	37.3 (11.8)	42.9 (12.4)
Gender (<i>n</i>)	Female	349	175	174	217	95	122
	Male	188	93	95	116	50	66
	Genderqueer, gender nonconforming, or nonbinary	9	5	4	8	4	4
	Trans Female	1	0	1	0	0	0
	Trans Male	1	1	0	1	1	0
Sexual Orientation (<i>n</i>)	Heterosexual or straight	462	236	226	288	125	163
	Gay	12	3	9	8	2	6
	Lesbian	10	3	7	7	3	4
	Bisexual	50	24	26	29	14	15
	Asexual	9	5	4	7	4	3
	Queer	2	1	1	1	0	1
	Pansexual	2	2	0	2	2	0
	Demisexual	1	0	1	0	0	0
Education (<i>n</i>)	Less than a high school diploma	3	2	1	1	0	1
	High school graduate or equivalent	60	23	37	39	15	24
	Some college	192	114	78	112	61	51
	Associate degree	7	4	3	6	3	3
	Bachelor's degree	207	104	103	137	60	77
	Master's degree	66	22	44	40	9	31
	Doctorate or equivalent	13	5	8	9	3	6
Covid (<i>n</i>)	Contracted covid 19	321	168	153	195	91	104
	Not contracted covid 19	226	105	121	148	59	89

Independent samples t-tests were conducted to determine if there were group differences between participants who completed only Time 1 and participants who completed both Time 1 and Time 2. Results are shown in Table 2. Participants who completed both time points were more likely to be White, had lower rates of COVID-19, and had lower usage of avoidant, vigilant, emotion-focused, and problem-focused coping than participants who only completed Time 1.

Table 2

Differences Between Participants Who Completed T1 Only and Those Who Completed T1 and T2

Variable	T1 Only		T1 and T2		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Race	.60	.49	.44	.50	546	3.75***
Gender	.65	.48	.65	.48	535	.00
Sexual Orientation	.84	.37	.84	.36	546	.00
Education	.41	1.39	.41	1.37	546	.11
Covid	.50	.50	.36	.48	545	3.02**
Racial Discrimination T1	14.45	9.49	13.19	7.86	498	1.61
ACEs T1	10.15	8.21	9.59	7.76	546	.80
Religious Coping T1	17.98	9.13	17.41	9.10	546	.71
Avoidant Coping T1	14.71	4.53	13.72	4.29	546	2.58**
Vigilant Coping T1	25.39	6.91	23.62	7.34	546	2.79**
Emotion-focused Coping T1	16.97	3.61	16.27	3.40	546	2.29*
Problem-focused Coping T1	21.24	5.08	19.88	5.44	546	2.91**
Physical Health T1	19.71	5.70	19.59	5.72	545	.23
Satisfaction with Life T1	19.63	7.96	20.17	8.44	546	-.73
Psychological Well-being T1	22.94	4.11	22.98	4.64	546	-.09
Social Well-being T1	20.87	4.29	20.89	4.75	546	-.04

Note: Significant results are in bold. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Preliminary Analyses

Variables were analyzed for normality and transformed if they were found to be skewed or have high kurtosis. First, the z scores of skewness and kurtosis were calculated and compared to the critical z value of 1.96 which indicated a 95% confidence interval. For variables with values above this z score, P-P and Q-Q plots were then visually inspected. If transformations reduced z scores and made the data more normal on the P-P and Q-Q plots, the transformed variables were selected and used in the analyses. ACEs, religious coping, and avoidant coping were all positively skewed, and log transformations improved their normality. Therefore, these transformed variables were used in the analyses. Variable information before transformations can be found in Table 3.

Table 3*Main Variable Information*

Variable	Mean	SD	Skewness	SE Skewness	Kurtosis	SE Kurtosis
ACEs T1	3.3	2.6	.74	.10	-.19	.21
Religious Coping T1	4.4	2.3	.40	.10	-1.33	.21
Avoidant Coping T1	14.1	4.4	.90	.10	.36	.21
Vigilant Coping T1	24.3	7.2	-.30	.10	-.63	.21
Emotion-focused Coping T1	49.6	10.5	-.07	.10	-.13	.21
Problem-focused Coping T1	20.4	5.3	-.10	.10	-.56	.21
Physical Health T2	3.3	1.0	-.09	.13	-.36	.26
Satisfaction with Life T2	20.0	8.3	-.19	.13	-1.05	.26
Psychological Well-being T2	183.7	35.6	-.29	.13	-.26	.26
Social Well-being T2	125.3	27.5	-.02	.13	-.07	.26
Racial Discrimination T1	23.6	9.1	.75	.19	.07	.38

Missing data are described in Table 4. The data on each item was missing by less than one percent. These data may have been missing due to the content of the questions. Participants may have felt uncomfortable answering certain questions and may have not responded to them. Therefore, the data were most likely missing at random (Little et al., 2014). Total scores were then calculated by computing an average and multiplying this average by the number of items making up a variable. As data were most likely missing at random, full information maximum likelihood (FIML) was used to estimate any remaining missing data (Johnson & Young, 2011). FIML uses all available data in the dataset to estimate parameter coefficients and has been shown to be an effective method of estimating missing data in the presence of observed data (Johnson & Young, 2011).

Table 4*Missing Data*

Variable	Number missing	Percent missing
Age	1/548	.2%
Gender	0/548	0%
Sexual Orientation	0/548	0%
Education	0/548	0%
Covid	1/548	.2%
Race	0/548	0%
Racial Discrimination T1	0/548 – 1/548	0% - .2%
ACEs T1	0/548 – 3/548	0% -.5%
Religious Coping T1	0/548 – 1/548	0% - .2%
Avoidant Coping T1	0/548 – 2/548	0% - .4%
Vigilant Coping T1	0/548 – 3/548	0% -.5%
Emotion-focused Coping T1	0/548 – 4/548	0% -.7%
Problem-focused Coping T1	0/548 – 1/548	0% - .2%
Physical Health T2	1/344	.3%
Satisfaction with Life T2	0/344 – 1/344	0% - .3%
Psychological Well-being T2	0/344 – 3/344	0% - .9%
Social Well-being T2	0/344 – 2/344	0% - .6%

Note: This table represents the range of missing data for the items on each scale/subscale.

Zero-order correlations were analyzed between the demographic variables and main variables of interest. First, age was correlated with several of the main variables. The results indicated that younger participants reported more ACEs and reported greater use of avoidant, vigilant, and emotion-focused coping, while older participants reported greater use of religious coping and higher social and psychological well-being. Second, gender was correlated with ACEs such that females reported experiencing more ACEs. Third, correlations between sexual orientation and main variables were found, indicating that straight individuals reported using more religious coping, and higher levels of resilience across all indicators. Those not identifying as straight reported more ACEs and greater use of avoidant and vigilant coping. Fourth, correlations with education were found. Participants with more education reported experiencing fewer ACEs, greater use of problem-focused coping, better health, and higher social and psychological well-being. Fifth, individuals who reported catching covid reported higher rates of vigilant coping, and lower physical health, psychological, and social wellbeing. Lastly, individuals who reported experiencing more racial discrimination also reported greater use of religious and vigilant coping, as well as more problem-focused and emotion-focused coping. These relationships can be found in Table 5.

Table 5*Zero Order Correlations Between Demographics and Main Variables*

Variable	Age	Gender	Sexual Orientation	Education	Covid	Racial Discrimination
ACEs T1	-.14**	.10*	-.20***	-.18***	.07	-.03
Religious Coping T1	.10*	.06	.20***	-.01	-.05	.11**
Avoidant Coping T1	-.32***	.01	-.18***	-.02	.07	.05
Vigilant Coping T1	-.25***	.07	-.11*	-.03	.10*	.17***
Emotion-focused Coping T1	-.16***	.06	-.04	.03	.04	.09*
Problem-focused Coping T1	-.04	.01	.05	.09*	.00	.10*
Physical Health T2	.05	-.03	.17**	.13*	-.12*	.00
Satisfaction with Life T2	.09	-.01	.12*	.08	.01	-.06
Psychological Well-being T2	.25***	-.09	.18**	.14*	-.13*	.05
Social Well-being T2	.18**	-.10	.15**	.22***	-.13*	.02

Note: Results are given as Pearson correlations for age, education, and racial discrimination as they are continuous variables being analyzed with continuous variables. Results are given as point biserial correlations for gender (male = 0, female = 1), sexual orientation (0 = straight, 1 = not straight), and covid (0 = not gotten covid, 1 = gotten covid) as they are dichotomous variables being analyzed with continuous variables. Significant results are in bold.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Correlations between the same variables at T1 and T2 were then analyzed. All variables at T1 were significantly correlated with their respective T2 variable: ACEs ($r = .80, p < .001$), religious coping ($r = .80, p < .001$), problem-focused coping ($r = .56, p < .001$), emotion-focused coping ($r = .61, p < .001$), vigilant coping ($r = .61, p < .001$), avoidant coping ($r = .68, p < .001$), physical health ($r = .75, p < .001$), satisfaction with life ($r = .84, p < .001$), psychological well-being ($r = .90, p < .001$), social well-being ($r = .83, p < .001$).

Main variables of interest were then analyzed. Strong correlations in the expected directions were found among the main variables. Having more ACEs was associated with greater use of avoidant, vigilant, and emotion-focused coping. Further, having more ACEs was associated with lower scores on all resilience indicators (physical health, satisfaction with life, psychological wellbeing, social wellbeing). Higher religious and problem-focused coping were both associated with higher scores on all resilience indicators. Higher vigilant and avoidant coping were associated with lower scores on all resilience indicators. Emotion-focused coping was not correlated with any resilience indicator. These relationships can be found in Table 6.

Table 6*Zero Order Correlations Between Main Variables*

Variable	1	2	3	4	5	6	7	8	9
1. ACEs T1	-								
2. Religious Coping T1	-.02	-							
3. Avoidant Coping T1	.27***	-.05	-						
4. Vigilant Coping T1	.29***	-.00	.37***	-					
5. Emotion-focused Coping T1	.20***	.46***	.40***	.30***	-				
6. Problem-focused Coping T1	.04	.41***	.06	.09*	.58***	-			
7. Physical Health T2	-.31***	.11*	-.28***	-.29***	.00	.18**	-		
8. Satisfaction with Life T2	-.20***	.20***	-.32***	-.27***	-.01	.20***	.45***	-	
9. Psychological Well-being T2	-.26***	.27***	-.47***	-.38***	-.02	.36***	.51***	.68***	-
10. Social Well-being T2	-.27***	.26***	-.33***	-.33***	.01	.29***	.44***	.58***	.74***

Note: Results are given as Pearson's r. Significant results are in bold.

* $p \leq .05$, *** $p \leq .001$

Racial Differences

Point-biserial correlations (correlations between dichotomous and continuous variables) between race and each of the main variables were then conducted. Being Black was associated with greater utilization of religious, avoidant, emotion-focused, and problem-focused coping. Being Black was also associated with lower levels of satisfaction with life compared to white individuals. Correlations are shown in Table 7.

Table 7

Correlations Between Race and Major Variables

Variable	Correlation with Race
ACEs T1	-.01
Religious Coping T1	.30^{***}
Avoidant Coping T1	.10[*]
Vigilant Coping T1	.08
Emotion-focused Coping T1	.12^{**}
Problem-focused Coping T1	.20^{***}
Physical Health T2	.03
Satisfaction with Life T2	-.11[*]
Psychological Well-being T2	.03
Social Well-being T2	.02
Racial Discrimination T1	.38^{***}

Note: Results are presented as point biserial correlations with race as a dichotomous variables Black = 1, White = 0. Significant results are in bold.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Regression analyses were used to examine aim 1. Race (0 = White, 1 = Black) was used as the independent variable, and variables of interest (ACEs, Coping, Resilience) were used as dependent variables. Covariates (age, gender, sexual orientation, education, COVID-19, racial discrimination) were controlled for in the analyses. Non-significant covariates were dropped to maximize statistical power to detect significant relationships among major variables.

Race did not significantly predict ACEs [$B = -.03(.04)$, $p = .50$], avoidant coping [$B = .01(.01)$, $p = .25$], vigilant coping [$B = -.17(.66)$, $p = .80$], physical health [$B = -.16(.48)$, $p = .74$], or social well-being [$B = .70(.52)$, $p = .18$]. However, race did significantly predict religious coping [$B = .15(.02)$, $p < .001$], emotion-focused coping [$B = .64(.30)$, $p = .03$], problem-focused coping [$B = 2.22(.45)$, $p < .001$], satisfaction with life [$B = -1.83(.92)$, $p = .05$], and psychological well-being [$B = .98(.49)$, $p = .05$]. These results indicated that Black individuals were more likely to use religious, emotion-focused, and problem-focused coping compared to White individuals after controlling for covariates. Further, Black individuals had lower life satisfaction, but higher levels of psychological well-being compared to White individuals after covariates were accounted for.

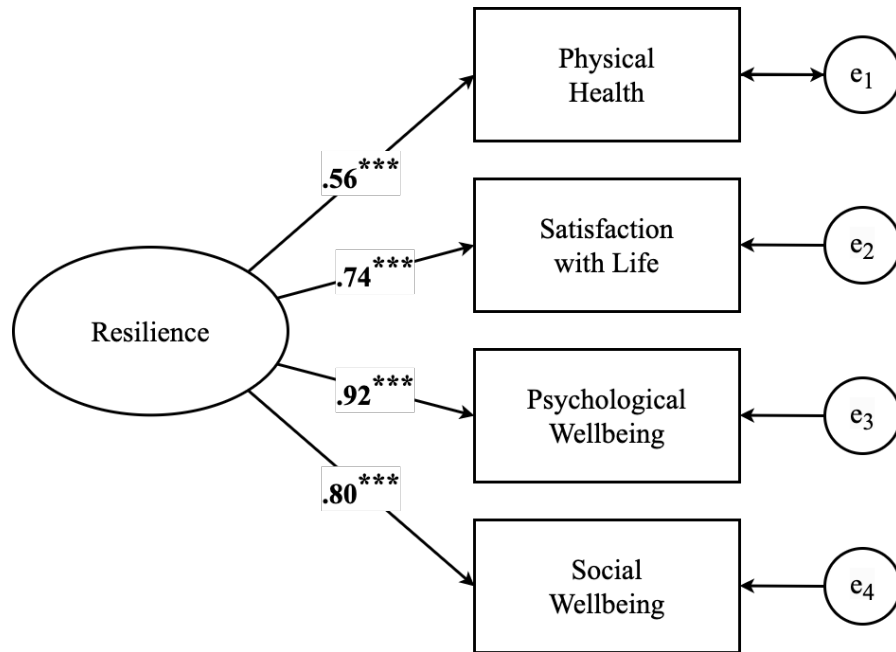
Mediations

Measurement Model

Aims 2, 3, and 4 were examined using structural equation modeling mediation analyses. A measurement model was first used to create a latent variable of resilience with four Time 2 indicators: physical health, satisfaction with life, social well-being, and psychological well-being. The measurement model had an excellent fit with the data (CFI = 1.00; TLI = 1.00; RMSEA = .01; $\chi^2 = 2.07$, $p = .36$) and all indicators significantly loaded onto the latent factor. Loadings are indicated in Figure 1.

Figure 1

Measurement Model



Note. This figure depicts the measurement model with each observed indicator loading onto the latent factor of resilience. Statistics are standardized regression coefficients. Significant statistics are in bold.

*** $p \leq .001$

Structural Models

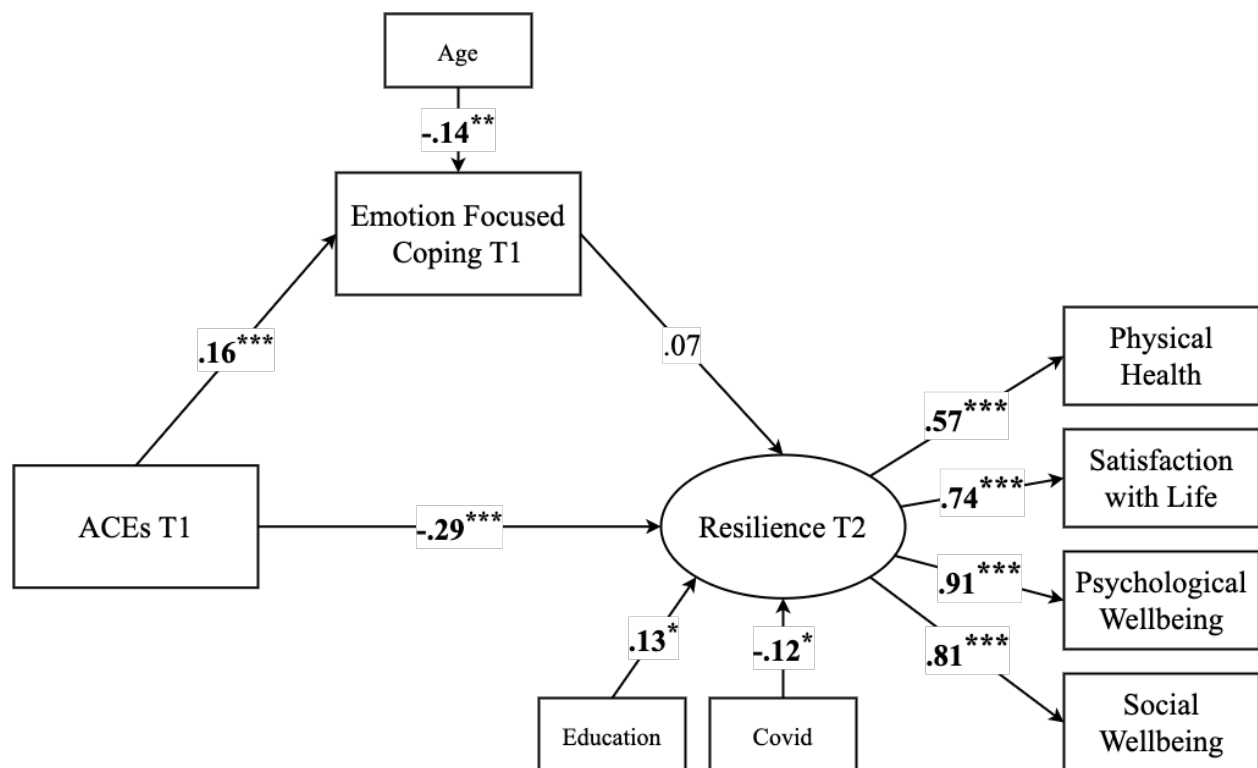
Structural models were then created with ACEs as the independent variable, the latent variable of resilience as the dependent variable, and each separate coping style as a mediator (emotion-focused, problem-focused, religious, avoidant, vigilant) for a total of five models. Covariates were controlled for and included if they were significant predictors of the dependent variables.

Emotion-focused Coping as a Mediator.

In model 1, more ACEs predicted lower resilience while controlling for emotion-focused coping. Increased ACEs predicted an increase in the use of emotion-focused coping. Emotion-focused coping did not significantly predict resilience while controlling for ACEs. Additionally, emotion-focused coping did not significantly mediate the relationship between ACEs and resilience (mediated effect = .16(.16), $p = .30$; 95% CI [-.12, .51]). This model fit the data well (CFI = .95; TLI = .92; RMSEA = .06). Statistics can be found in Figure 2.

Figure 2

Emotion-focused Coping Mediation Model



Note. This figure depicts the emotion-focused coping structural equation mediation model. Statistics are standardized regression coefficients. Significant statistics are in bold.

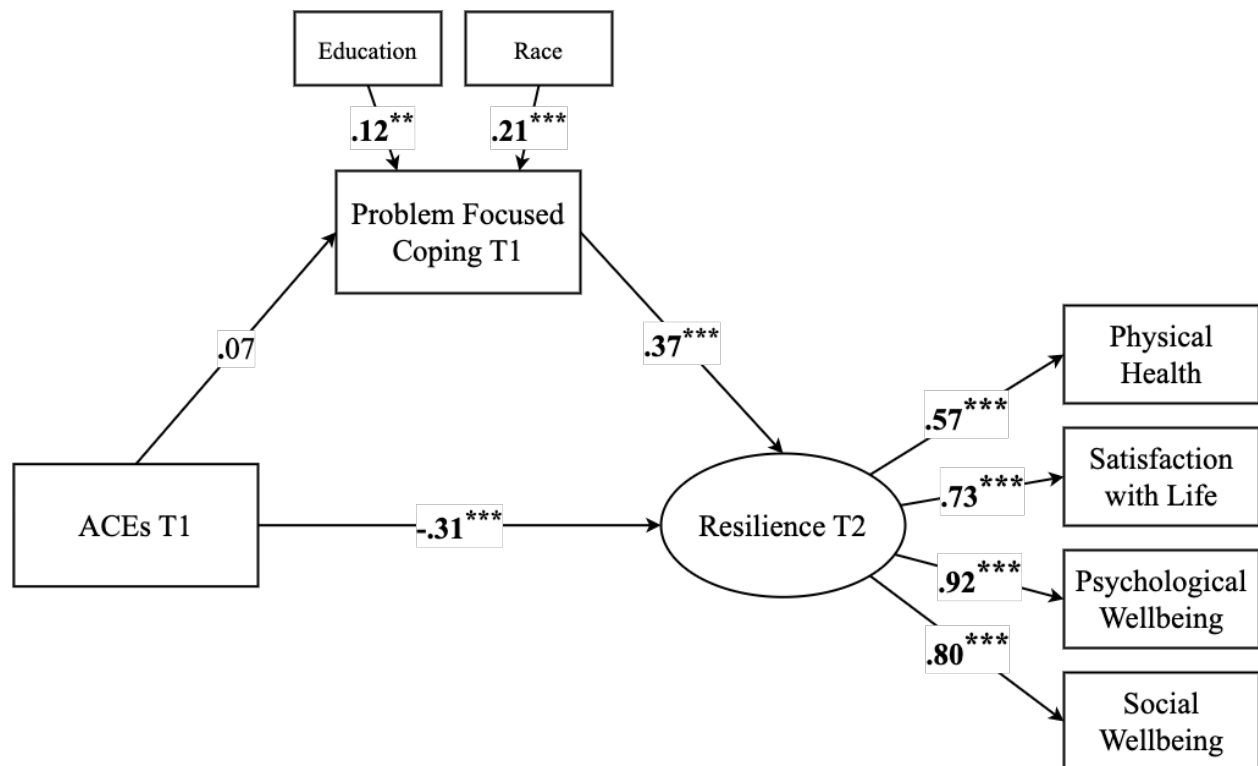
* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Problem-focused Coping as a Mediator.

In model 2, more ACEs predicted lower resilience while controlling for problem-focused coping. ACEs did not predict the use of problem-focused coping. However, higher problem-focused coping did predict higher resilience while controlling for ACEs. A significant mediation was not found (mediated effect = .34(.23), $p = .14$; 95% CI [-.11, .72]). This model fit the data well (CFI = .97; TLI = .95; RMSEA = .05). Statistics can be found in Figure 3.

Figure 3

Problem-focused Coping Mediation Model



Note. This figure depicts the problem-focused coping structural equation mediation model. Statistics are standardized regression coefficients. Significant statistics are in bold.

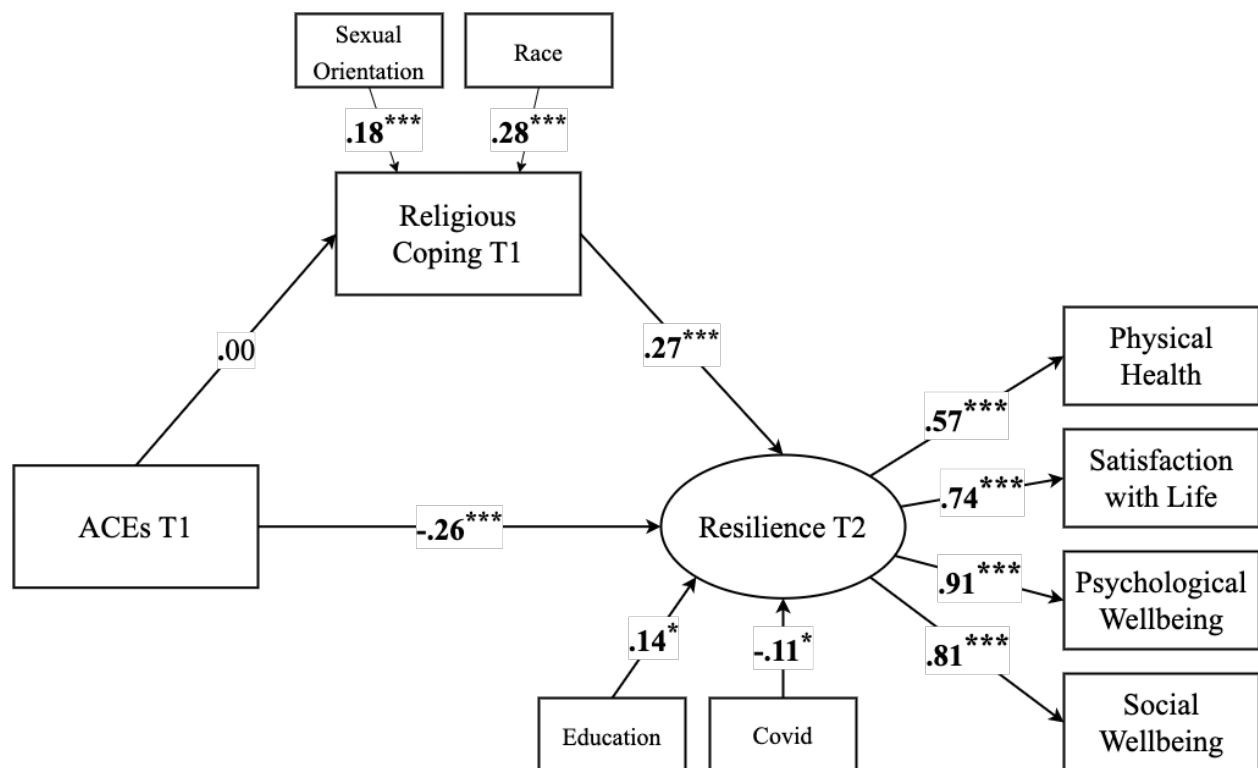
** $p \leq .01$, *** $p \leq .001$

Religious Coping as a Mediator.

In model 3, more ACEs predicted lower resilience while controlling for religious coping. ACEs did not predict the use of religious coping. Higher religious coping did however predict higher resilience while controlling for ACEs. Religious coping did not significantly mediate the relationship between ACEs and resilience (mediated effect = $-.01(.17)$, $p = .97$; 95% CI $[-.36, .34]$). This model fit the data well (CFI = .96; TLI = .94; RMSEA = .05). Statistics can be found in Figure 4.

Figure 4

Religious Coping Mediation Model



Note. This figure depicts the religious coping structural equation mediation model. Statistics are standardized regression coefficients. Significant statistics are in bold.

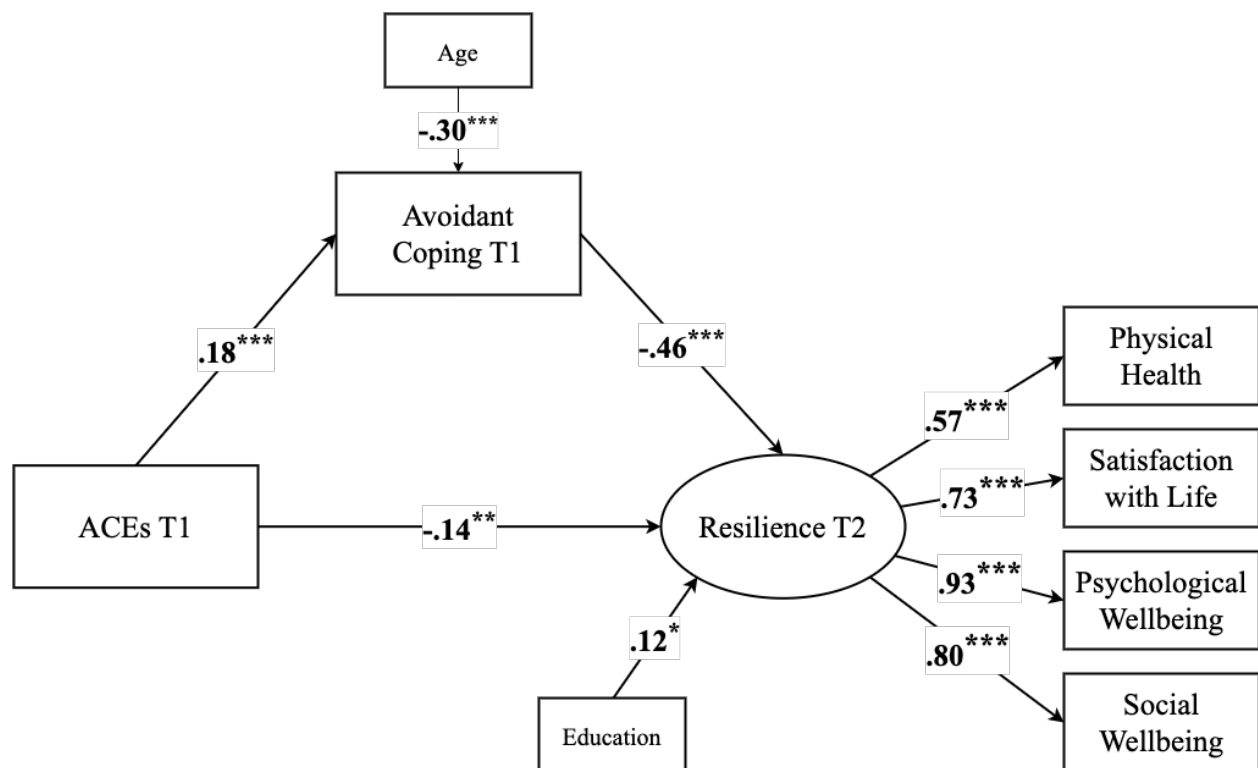
* $p \leq .05$, *** $p \leq .001$

Avoidant Coping as a Mediator.

In model 4, more ACEs predicted lower resilience while controlling for avoidant coping. Additionally, higher ACEs predicted greater use of avoidant coping. Further, the use of more avoidant coping predicted lower resilience while controlling for ACEs. A significant mediation was found such that avoidant coping could help explain why those with ACEs tend to experience lower resilience (mediated effect = $-1.18(.31)$, $p < .001$; 99% CI $[-2.05, -.50]$). This model fit the data well (CFI = .96; TLI = .94; RMSEA = .06). Statistics can be found in Figure 5.

Figure 5

Avoidant Coping Mediation Model



Note. This figure depicts the avoidant coping structural equation mediation model. Statistics are standardized regression coefficients. Significant statistics are in bold.

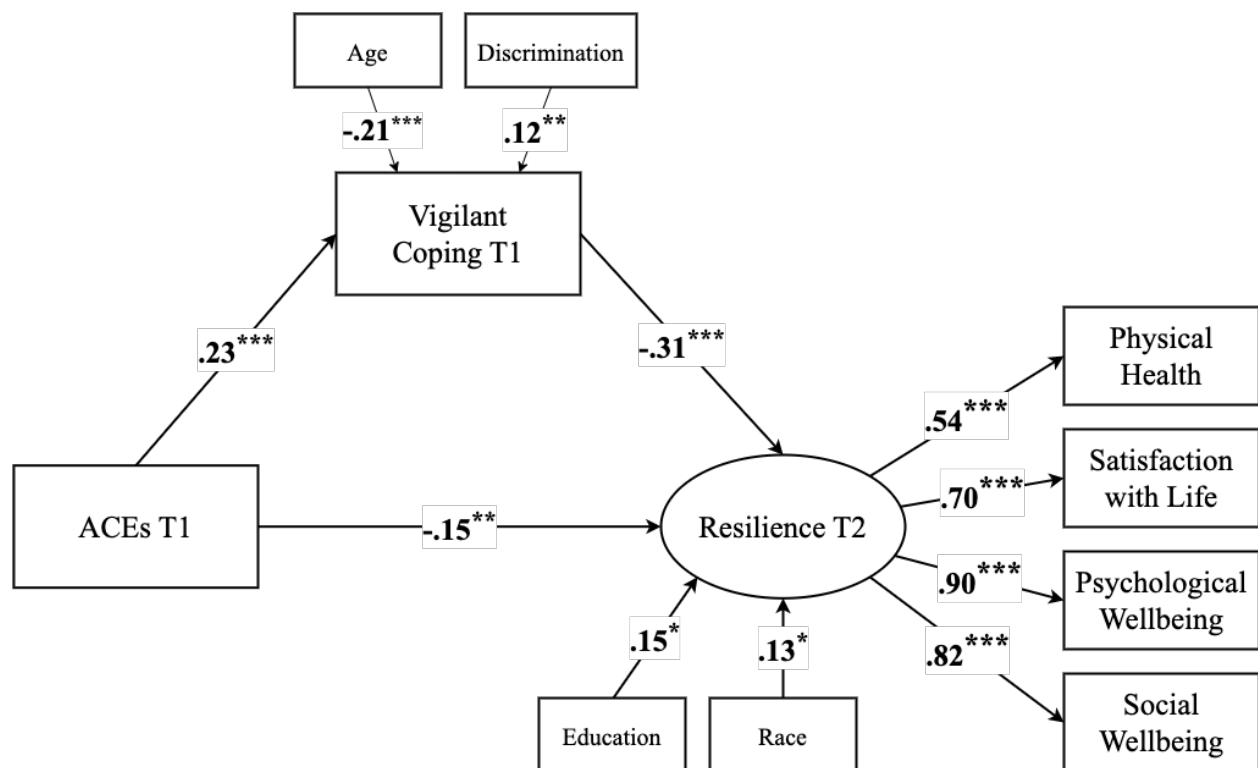
* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Vigilant Coping as a Mediator.

Lastly, in model 5, more ACEs predicted lower resilience while controlling for vigilant coping. Higher ACEs predicted greater use of vigilant coping, and the use of more vigilant coping predicted lower resilience while controlling for ACEs. A significant mediation was found such that vigilant coping could help explain why those with ACEs tend to experience lower resilience (mediated effect = $-.96(.27)$, $p < .001$; 99% CI $[-1.76, -.38]$). This model fit the data well (CFI = .94; TLI = .91; RMSEA = .06). Statistics can be found in Figure 6.

Figure 6

Vigilant Coping Mediation Model



Note. This figure depicts the avoidant coping structural equation mediation model. Statistics are standardized regression coefficients. Significant statistics are in bold.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Moderations

Aim 5 was analyzed using structural equation modeling multiple group analyses. There were two ways to compare relationships between groups in these analyses. The first method assumes that the relationships are the same across groups. These models are then compared to models in which the constraints on group differences are released allowing the groups to differ on each relationship. The second method assumes that the groups differ on each relationship. Group differences are then constrained to be the same on each relationship and compared to models without constraints. As there was not enough information to support specific group difference hypotheses, the first method of comparing groups was chosen as it begins with the assumption that the two groups are the same and allows for comparisons with more complex models that include group differences. Comparisons were conducted between two models at a time, one with a constrained path, and one in which the path was allowed to be different between groups. As the first model was nested within the second model, the models were compared using a Chi-square difference test. Each comparison differed by one degree of freedom. If the difference in Chi-square values between the models exceeded 3.84, the two models were statistically different from one another and the more complex model (the model in which the groups were allowed to differ) was selected. If the two models were not statistically different from one another, the simpler (more parsimonious) model was retained.

First, the factor loadings of resilience were tested to determine if they were the same across groups. A model in which the loadings of the 4 observed indicators were constrained to be equal between groups was compared to a model in which one factor loading was allowed to be different. No significant differences between racial groups were found between each of the factor loadings. Therefore, the simpler model (first model) was retained.

Next, each path of the mediation model was assessed for group differences by three sets of model comparisons. In each comparison, a model in which one path's regression coefficient was constrained to be equal between groups was compared to a model in which the same coefficient was allowed to be different. If the two models were significantly different from one another, this signified that the two groups were different on the analyzed path in the mediation model. In contrast, if there were no significant differences, the two groups were the same on that path. The same comparison was repeated to test whether each path's regression coefficient in the mediation model was equal across groups.

ACEs, Emotion-focused Coping, and Resilience

The final model which included ACEs, emotion-focused coping, and resilience had a good fit with the data (CFI = .92; TLI = .91; RMSEA = .06). Race did not significantly moderate the relationship between ACEs and emotion-focused coping, emotion-focused coping and resilience, or ACEs and resilience. The more complex models that allowed the coefficients in the mediation model to be different between the two groups were no better than the more parsimonious models that assumed the paths to be the same across groups. (ACEs → emotion-focused coping, *a* path: $X^2(1) = 0.59, p = .44$; emotion-focused coping → resilience controlling for ACEs, *b* path: $X^2(1) = 2.79, p = .10$; ACEs → resilience controlling for emotion-focused coping, *c'* path: $X^2(1) = 1.08, p = .30$). Therefore, the most parsimonious model was selected.

ACEs, Problem-focused Coping, and Resilience

The final model which included ACE, problem-focused coping, and resilience had an excellent fit with the data (CFI = .97; TLI = .96; RMSEA = .04). Race did not significantly moderate the relationship between ACEs and emotion-focused coping, emotion-focused coping and resilience, or ACEs and resilience (ACEs → problem-focused coping, *a* path: $X^2(1) = 0.00$,

$p = 1.00$; problem-focused coping $\rightarrow$ resilience controlling for ACEs, b path: $X^2(1) = .36, p = .55$; ACEs $\rightarrow$ resilience controlling for problem-focused coping, c' path: $X^2(1) = 2.73, p = .10$.

Therefore, the most parsimonious model was selected.

ACEs, Religious Coping, and Resilience

The final model which included ACE, problem-focused coping, and resilience had an excellent fit with the data (CFI = .96; TLI = .95; RMSEA = .04). Race did not significantly moderate the relationship between ACEs and emotion-focused coping, emotion-focused coping and resilience, or ACEs and resilience (ACEs $\rightarrow$ religious coping, a path: $X^2(1) = 0.50, p = .48$; religious coping $\rightarrow$ resilience controlling for ACEs, b path: $X^2(1) = 0.02, p = .89$, ACEs $\rightarrow$ resilience controlling for religious coping, c' path: $X^2(1) = 0.70, p = .40$). Therefore, the most parsimonious model was selected.

ACEs, Avoidant Coping, and Resilience

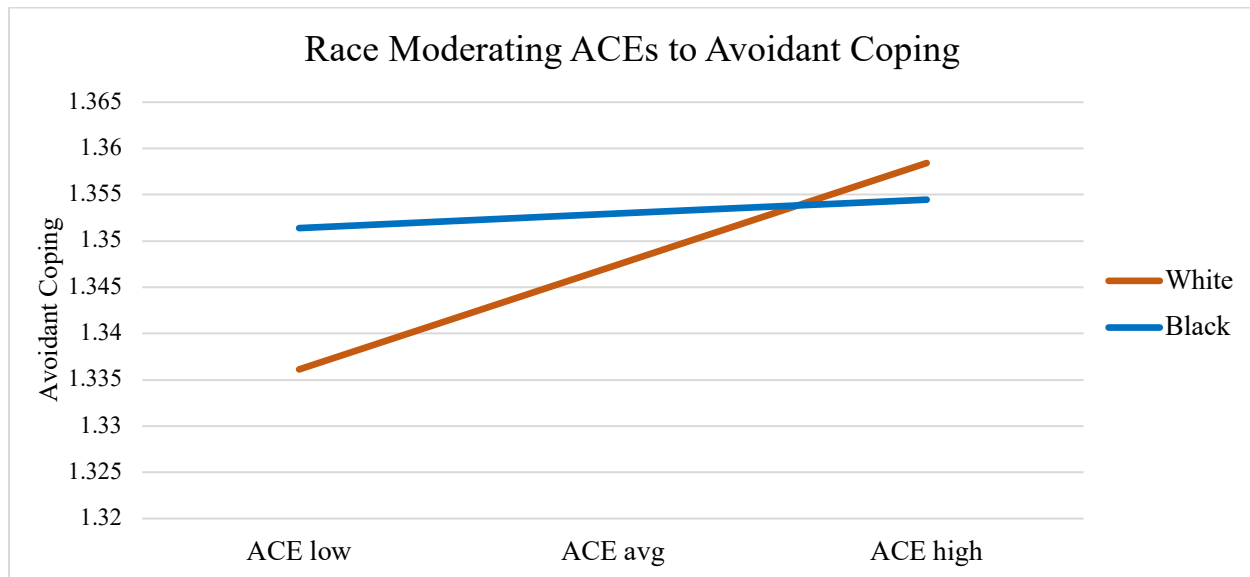
Within the model including ACE, avoidant coping, and resilience, race significantly moderated the a path (ACEs $\rightarrow$ avoidant coping; $X^2(1) = 12.60, p < .001$). The model which allowed the groups to be different on the a path was significantly better than the model which constrained the groups to be the same on this path. The significance of this moderation indicated that each racial group showed different levels of avoidant coping across ACEs. Black participants had less of an increase in avoidant coping with additional ACEs compared to White participants. Additionally, Black participants utilized more avoidant coping compared to White participants at low and average levels of ACE, while White participants used more avoidant coping at high levels of ACEs compared to Black participants. The moderated effect is shown in Figure 7. The b path ($X^2(1) = 1.98, p = .16$) and c' path ($X^2(1) = 0.46, p = .50$) of this model were not significantly moderated so the models which constrained the groups to be the same on

these paths were selected. This model had a good fit with the data (CFI = .93; TLI = .91; RMSEA = .07).

Additionally, the moderated mediation was tested to determine if the mediated effect of avoidant coping on the relationship between ACEs and resilience was the same for both Black and White participants. A significant mediated effect was found in White individuals (mediated effect = -2.17(.43), $p < .001$; 99% bootstrap CI [-3.09, -1.41]). However, the mediated effect was not significant for Black individuals (mediated effect = -.31(.41), $p = .45$; 99% bootstrap CI [-1.11, .48]).

Figure 7

Race Moderated the Relationship between ACEs and Avoidant Coping



Note. This figure depicts the moderation of the a path (ACEs to avoidant coping) by race.

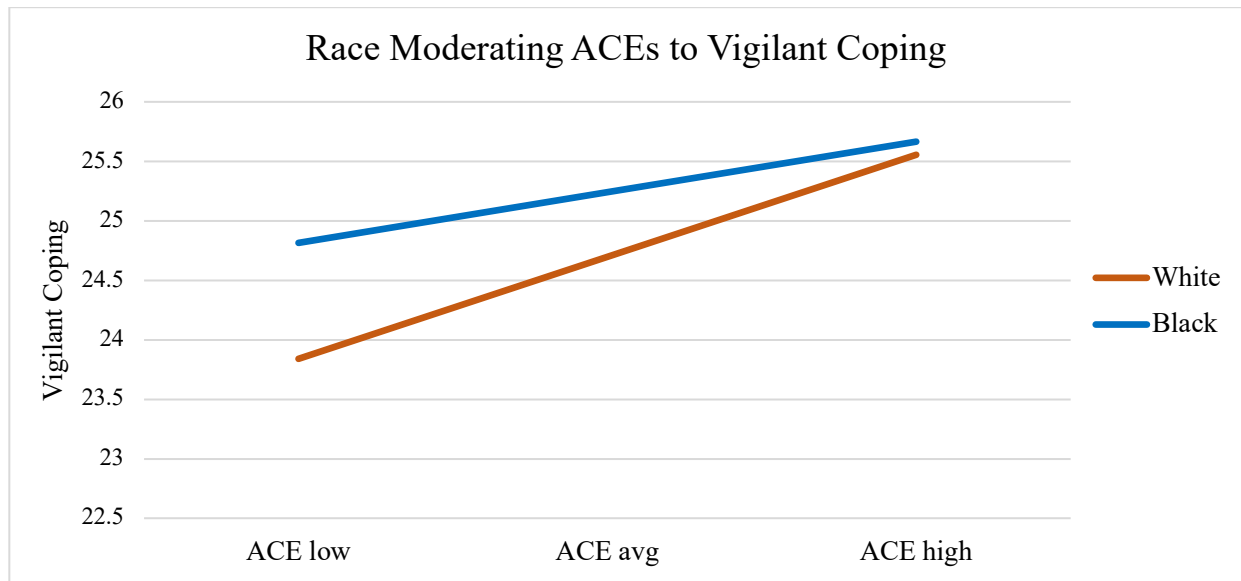
Within the model including ACE, vigilant coping, and resilience, race significantly moderated the *a* path. The model that constrained the *a* path to be the same was significantly worse than the model that allowed the *a* path to be different ($X^2(1) = 4.17, p = .04$). Each racial group showed different use of vigilant coping across levels of ACEs. Specifically, Black participants had less of an increase in vigilant coping with additional ACEs compared to White participants. This moderation is shown in Figure 8.

The *b* path ($X^2(1) = 3.04, p = .08$) and *c'* path ($X^2(1) = 0.97, p = .33$) of this model were not significantly moderated by race. For each path, we compared the model that constrained the path to be the same to a more complex model that allowed the path to be different. The two simpler models of the *b* path and the *c'* path were not significantly different from the more complex models, therefore the simpler models were selected. The final model had a good fit with the data (CFI = .94; TLI = .93; RMSEA = .05).

Further, the moderated mediation was tested to determine if the mediated effect of vigilant coping on the relationship between ACEs and resilience was the same for both Black and White participants. A significant mediated effect was found in White individuals (mediated effect = -1.34(.37), $p < .001$; 99% bootstrap CI [-2.11 -.68]). The mediated effect was also significant for Black individuals (mediated effect = -.60(.28), $p = .035$; 99% bootstrap CI [-1.22, -.09]).

Figure 8

Race Moderated the Relationship between ACEs and Vigilant Coping



Note. This figure depicts the moderation of the *a* path (ACEs to vigilant coping) by race.

Discussion

This study aimed to expand our current understanding of the relationships between ACEs, coping styles, and resilience between Black and White individuals. Some hypotheses were supported while others were not. Main findings herein are summarized with respect to each study aim, and implications for future research and intervention programs are discussed. Finally, study limitations and ideas regarding how to circumvent these limitations in future studies are proposed.

Aim 1a

Aim 1 of this study was to determine if there were racial differences in ACEs, coping styles, and resilience between Black and White racial groups. We originally hypothesized that Black participants would report more ACEs than White participants would. However, no significant differences in ACEs were found between these groups. This finding is contradictory to many previous studies that indicate that Black individuals commonly experience more ACEs than White individuals (Mersky et al., 2021; Sacks & Murphey, 2018; Zhang & Monnat, 2022). This is likely due to the makeup of our sample compared to the samples in prior studies. For example, many previous studies used community samples of children and adolescents. As participants of the current study were 18 years and older and data were collected on the internet, we are potentially targeting a different group of people than those in previous studies. Further, although MTurk users are generally more representative of the U.S. population than college students at certain institutions, prior research has indicated that MTurk users have demographic differences compared to non-MTurk samples. For example, MTurk users tend to be younger and more educated than the average individual in the U.S. (Walters et al., 2018). Further, Mturk users

must have access to a device that has access to the internet. These factors may affect the number of ACEs reported.

Aim 1b

Our hypotheses in aim 1b were that Black participants would report using more avoidant, emotion-focused, vigilant, and religious coping, as well as less problem-focused coping than White participants after controlling for demographic covariates and perceptions of racial discrimination. First, consistent with prior research, Black individuals were more likely to use religious coping (Chapman & Mullis, 2000; Gemmel et al., 2016). Historically, religion has been shown to be a source of hope, safety, and social solidarity among Black individuals (Mohamed et al., 2021). Indeed, this is reflected in higher rates of religious involvement in Black groups within the U.S. compared to White groups (Chatters et al., 2009). Further, the use of religious coping tends to predict higher scores on all measures of resilience, suggesting that religious coping may be a positive and effective coping style for those using it.

Second, Black individuals were more likely to use emotion-focused coping compared to White individuals. Prior research reported similar results (Reynolds et al., 2000). Additionally, research by Vassilliere and colleagues (2016) suggests that this relationship might occur due to racial discrimination. However, in the current study, we found that race predicts emotion-focused coping above and beyond racial discrimination, suggesting that Black individuals learn emotion-focused coping strategies at greater rates than White individuals despite feelings of racial discrimination.

Third, Black individuals were more likely to utilize problem-focused coping compared to White individuals. This contrasts our original hypothesis. There are currently few studies that analyze racial differences in problem-focused coping, and the results of these studies are mixed.

For example, Plummer and Slane (1996) found that Black adults, mostly residing in the Midwest, reported using more problem-focused coping than White individuals during recollection of a racially stressful situation. Further, Van Gundy and colleagues (2015) found that Black adolescents in southern Florida were generally less likely to use problem-focused coping than White individuals.

Racial differences in the use of problem-focused coping may depend on racial inequalities in specific locations. Van Gundy and colleagues (2015) found less problem-focused coping in Black adolescents in southern Florida and research has shown that Black Floridians face racial inequalities such as lower life expectancy, lower income, and higher rates of incarceration compared to the national average (Bharmal et al., 2012; Jenkins et al., 2023; U.S. Department of Labor, 2020). Therefore, it may be the case that Black individuals in Florida are experiencing situations such as monetary stress, and a higher risk of incarceration for drug possession compared to White individuals despite similar rates of drug usage, etc. (Rowell-Cunsolo et al., 2013). These experiences may then reduce the likelihood of using problem-focused coping in these individuals. This is a potential explanation for why our study, which was conducted on individuals across the U.S., and Plummer and Slane's (1996) study, which was conducted on individuals in the Midwest, show the opposite results to Van Gundy's study. However, to further support this premise, future research should measure life stress and multiple types of racial discrimination in different locations in the U.S. to determine if these differences predict the use of problem-focused coping.

Fourth, we did not find racial differences in the use of avoidant coping. Research in prior literature is somewhat contradictory when describing racial differences in avoidance coping. For example, Van Gundy and colleagues (2015) found that Black individuals use more avoidant

coping than White individuals. However, White individuals reported more avoidant coping than Black individuals in Chapman and Mullis's (2000) study. As these findings are mixed, there may be variables outside of race that are more important in determining the use of avoidant coping. Within our own study, we found that age and sexual orientation predicted the use of avoidant coping such that younger participants and those who identified as not straight were more likely to use avoidant coping. This suggests that race may not play a major role in the use of avoidant coping and that other demographic variables may be more salient in these relationships.

Additionally, a common theme within our results is that younger participants tend to use more harmful coping styles, such as avoidant and vigilant coping, compared to older participants. This is important information as it may be beneficial to target coping styles in younger individuals in clinical settings. Additionally, it should inform future studies on age and coping style usage. For example, future research could determine if the use of harmful coping styles is a developmental characteristic and generally decreases with age, or if younger generations are showing increased usage of these harmful coping styles in comparison to older generations. Results from these types of studies could inform interventions in different age groups.

Lastly, although we did not find racial differences in vigilant coping, we did find that age and racial discrimination predicted the use of vigilant coping such that younger participants and those who felt discriminated against due to their race were more likely to use vigilant coping. These results suggest that when studying racial differences, it is important to control for variables that are associated with race (e.g., racial discrimination), as they may be more predictive than race itself. For example, LaVeist and colleagues (2014) found that Black individuals used more vigilant coping than White individuals, but the researchers did not control for racial discrimination in their study. The results from our study suggest that LaVeist and

colleagues' (2014) results may be due to experiences of racial discrimination, but additional research would be needed to confirm this. Controlling for racial discrimination and other demographic covariates related to race allows researchers to understand and examine the reasons underlying racial differences and should therefore be analyzed in future studies examining differences between racial groups.

Aim 1c

Aim 1c determined differences in resilience between Black and White individuals. Past research consistently shows that Black individuals have poorer physical health such as lower life expectancy, and greater rates of heart disease compared to White individuals (Kochanek et al., 2013; National Academies of Sciences, Engineering, and Medicine, 2017; Center for Behavioral Health Statistics and Quality, 2021). Additionally, there is some evidence that there are racial differences in psychological well-being such that Black individuals report fewer psychological disorders and lower life satisfaction, but more information is needed in these areas.

Therefore, we hypothesized that Black individuals would have poorer physical health than White individuals. However, our results indicate that Black and White participants did not differ in physical health outcomes. These results may be in part due to the levels of education found in our sample. Educational attainment differences by race were smaller in our sample than in the U.S. population. In the U.S. 41.9% of White individuals and 28.1% of Black individuals 25 years or older had obtained a bachelor's degree or higher (U.S. Census Bureau, 2022). Within our sample, 56.9% of White participants, and 51.3% of Black participants within that age group had obtained a bachelor's degree or higher. As education level and physical health are positively related in prior research (Zajacova & Lawrence, 2018), and our own results indicate that education

explains more of the variance in physical health than race does, this may be the reason for our results.

Further, our results indicated that Black individuals had lower life satisfaction and higher levels of psychological well-being compared to White individuals but did not significantly differ in social wellbeing, or overall resilience. Prior research suggests that this may be a common pattern. Williams (2018) comments that Black individuals tend to have lower measures of life satisfaction, but higher rates of psychological well-being compared to White individuals. There are several potential explanations for these differences. First, race-related stress has been shown to be associated with lower life satisfaction (Driscoll et al 2014). Race-related stress can involve discrimination in direct social exchanges like we measured in the current study, but it can also include institutional and cultural discrimination such as negative media portrayal of Black individuals or lack of access to community resources, etc. (Driscoll et al 2014). Black individuals generally experience higher rates of each of these types of race-related stressors (Williams, 2018) and this may be the reason why they tend to experience lower life satisfaction.

The reasons for higher psychological wellbeing in Black individuals may be more associated with protective factors that Black individuals associate with. For example, Blaine and Crocker (1995) found that religious belief was associated with higher psychological wellbeing in Black individuals but not White individuals. As previously mentioned, religion has been shown to be an important and protective resource for Black individuals as it provides hope, safety, and community (Mohamed et al., 2021). Further, we found a significant correlation between religious coping and psychological wellbeing in our sample. As our Black participants tended to show higher rates of religious coping, this may be one reason why they also show higher psychological wellbeing compared to White individuals.

Aim 2

Our second aim was to examine the relationships between ACEs and each coping style within our study. We hypothesized that individuals with more ACEs would be more likely to use emotion-focused and avoidant coping. Our results support this hypothesis and prior research indicates similar results (Sheffler et al., 2019). ACEs tend to make individuals feel as if they have little control over stressors in their environment (Sheffler et al., 2019). This perception of lack of control tends to reduce the use of coping styles that directly impact stressors such as problem-focused coping (Doron et al., 2010). This is likely why those who are exposed to ACEs are more likely to adopt coping styles that allow them to have some sense of control, even without direct control over stressors. For example, it may be that individuals who use emotion-focused coping feel that they cannot directly impact stressors but do have the ability to take control over their negative emotions associated with stressors. Further individuals who use avoidant coping may also feel they have little control over stressors which may lead to taking control over their engagement in stressful situations.

Our last hypothesis within this aim was that individuals with more ACEs would be less likely to use problem-focused coping. Our results did not support this hypothesis. Again, prior studies have shown some mixed results in this area. Sheffler and colleagues (2019) found that ACEs had a significant negative relationship with problem-focused coping. However, similar to our own results, Sesar and colleagues (2010) found that different types of child abuse did not predict the use of problem-focused coping but did predict emotion-focused and avoidant coping. Additionally, Solberg and colleagues (2023) recently found that more ACEs predict the use of greater disengaged coping but not adaptive coping. Based on our findings and Sesar and Solberg's research, it seems that ACEs do not both increase the likelihood of harmful coping

style usage and decrease the likelihood of helpful coping style usage, but only increase the likelihood that individuals will use harmful coping styles. It is therefore important for future intervention programs to focus on reducing coping styles such as avoidant coping in individuals with ACEs. For example, cognitive behavioral therapy has been shown to be effective in reducing avoidance coping as it teaches individuals to reappraise stressful situations and improve their confidence in dealing with stressors (Hamden-Mansour et al., 2009).

We did not have a hypothesis for the relationship between ACEs and religious coping as there was little research on this topic. Our results indicated that ACEs did not predict religious coping. Religion has been shown to be transmitted generationally and taught at a young age (Pew Research Institute, 2016). Additionally, those who were raised religiously as children often maintain their religious affiliation into later ages in part due to how much value was placed on religion within their family at a young age (Pew Research Institute, 2016). Therefore, ACEs may not have a substantial impact on the development of religious coping, and family values may be a greater predictor.

Lastly, although we did not have a hypothesis for the relationship between ACEs and vigilant coping, due to the lack of research on vigilant coping in general, we found that individuals with more ACEs were more likely to use vigilant coping. Stressors often evoke a stress response in which the individual is hyper-aware of their environment to increase chances of survival (Hermans et al., 2014). Prior research indicates that individuals exposed to trauma show changes in brain regions associated with the body's stress response such as the prefrontal cortex and the amygdala, among many others (Weiss, 2007). These changes increase stress reactivity and decrease the brain's ability to reduce stress responses which can lead to

hypervigilance (Weiss, 2007). Therefore, individuals who are exposed to multiple stressors, such as ACEs, have an increased probability of adopting vigilant coping (Sheffler et al., 2020).

Although the current literature shows strong associations between trauma and hypervigilance, not everyone exposed to trauma will develop hypervigilance. Many factors such as environment, social support, genetics, etc., all play a role in protecting or increasing risk in individuals exposed to trauma (Worthington et al., 2020). Current research is continuing to develop our understanding of risk for hypervigilance after trauma, but less is known about how Black individuals fare after exposure to trauma. Although the current study attempts to contribute to this understanding, continued research is needed. For example, future studies could analyze cultural differences in family interactions to determine if these interactions are helpful or harmful to an individual's resilience. Further, as Black individuals are exposed to more racial discrimination than White individuals, it would be beneficial to determine which types of discrimination (income inequality and poverty, access to health care, rates of incarceration, media portrayal of Black individuals, direct racial discrimination in social interactions, etc.) are most harmful to the individual as this information could directly influence public health strategies and clinical care.

Aim 3

Our third aim was to examine the relationship between each coping style and resilience while controlling for ACEs. We hypothesized that individuals who used more emotion-focused coping would have lower resilience scores while controlling for ACEs. Our results did not indicate a significant relationship between emotion-focused coping and resilience. Prior research has found that emotion-focused coping can produce either positive (e.g., increased wellbeing, reduced suicidal ideation; Yoon et al., 2018; Green et al., 2010) or negative outcomes (e.g.,

reduced wellbeing, troubles in relationships, reduced overall resilience; Alonso-Tapia et al, 2019; Mayordomo-Rodríguez et al., 2021). Therefore, it is not necessarily surprising that we found no significant relationship between emotion-focused coping and resilience. In fact, emotion-focused coping was not correlated with any of the observed factors of the latent resilience variable in our study (psychological, social, satisfaction with life, physical health). As the current literature is mixed on the relationship between emotion-focused coping and resilience, future research could focus on identifying the contexts in which emotion-focused coping is used, as these differences may contribute to this type of coping having positive or negative effects on resilience.

Second, we hypothesized that those who use more avoidant coping would show lower resilience scores while controlling for ACEs. This hypothesis was supported. Avoidant coping has generally been found to have negative effects on wellbeing and our results are in line with this prior research (Milas et al., 2021). Prior research has shown that those who utilize avoidant coping when presented with a stressor, tend to create additional stressors due to the use of this coping style (Holahan et al., 2005). Individuals who use avoidant coping may create stressors in several ways. For example, avoiding financial responsibilities can increase financial hardship, avoiding social problems may increase feelings of resentment from friends, family, or significant others, and avoiding getting help for psychological problems can increase psychopathological symptoms (Holahan et al., 2005). As these additional stressors accumulate, the well-being of the individual suffers (Holahan et al., 2005). This is one reason why it is important to target and reduce the use of avoidant coping in those who have experienced childhood adversity.

Interventions that aim to reduce the use of avoidant coping, such as cognitive behavioral therapy, can teach individuals how to adequately handle stressful situations (Hamden-Mansour et al.,

2009), and may reduce the creation of additional stressors which could further increase wellbeing.

Third, we hypothesized that those who use more problem-focused coping would show higher resilience scores while controlling for ACEs. This hypothesis was also supported. Problem-focused coping tends to be associated with many positive outcomes ((Alonso-Tapia et al., 2019; Leipold et al., 2019; Mayordomo-Rodríguez et al., 2021) and our results support these prior findings. Prior literature has shown that those who engaged in problem-focused coping took a more active role in reducing the effects of a stressor and had increased feelings of autonomy (Zamen & Ali, 2019). As autonomy is associated with subjective wellbeing (Yu et al., 2017), engaging in problem-focused coping is therefore beneficial.

However, Sheffler and colleagues (2019) found a significantly negative relationship between problem-focused coping and physical health problems, but no significant relationships between problem-focused coping and psychological symptoms or diagnoses. Based on our results and the results from Sheffler and colleagues (2019), it seems that problem-focused coping may be related to increases in physical health and other factors of wellbeing such as social wellbeing, psychological wellbeing, and satisfaction with life, but it has less of an effect on reducing diagnosable psychological disorders.

We did not have a hypothesis for the relationship between religious coping and resilience while controlling for ACEs as prior research has contradictory findings (Abu-Raiya & Pargament, 2015). We found that participants who reported the use of more religious coping also had higher resilience scores. Research suggests that individuals who use religious coping may be more resilient due to cognitive reappraisal of life stressors (Dolcos et al., 2021). For example, individuals high in religious coping may find greater meaning and purpose in stressful events,

which may reduce ruminations of life circumstances and negative feelings and increase motivation for self-improvement and growth (Dolcos et al., 2021).

Lastly, we did not have a hypothesis for the relationship between vigilant coping and resilience while controlling for ACEs as there is little research to support any hypothesis. However, we found that greater vigilant coping predicted lower resilience. LaVeist and colleagues (2014) suggest that vigilant coping might lead to negative outcomes partly due to a continued heightened state of arousal. This arousal requires energy and eventually, this energy is depleted which can lead to mental and physical fatigue and negative health consequences (Guidi et al., 2020).

Aim 4

Aim 4 examined whether and how each coping style mediated the relationship between ACEs and resilience. We hypothesized that emotion-focused coping would mediate this relationship, but a significant mediation was not found. While ACEs significantly predicted the use of emotion-focused coping, controlling for ACEs, emotion-focused coping did not predict resilience.

Further, we hypothesized that avoidant coping would mediate the relationship between ACEs and resilience. This hypothesis was supported. Avoidant coping was one variable that could help explain why individuals with higher ACEs tend to experience lower resilience. Prior research has indicated similar results. Sheffler and colleagues (2019) found that ACEs were associated with avoidant/emotion-focused coping which predicted more psychiatric disorders such as major depressive disorder, generalized anxiety disorder, panic disorder, as well as chronic health problems such as autoimmune disorders, diabetes, and heart conditions.

Additionally, Solberg and colleagues (2023) found that disengaged coping mediated the relationship between ACEs and mental health, smoking, and substance use.

Stressors have commonly been associated with the use of more harmful coping styles. Individuals who have experienced stressful life events may feel they have less control over their environment and resort to avoiding stressful situations (Sheffler et al., 2019). Additionally, avoidant coping is commonly associated with negative outcomes as it has been shown to create additional stressors (Holahan et al., 2005). Therefore, our results not only support these relationships but also show the longitudinal effects of an avoidant coping style on resilience in individuals with varying numbers of ACEs. Together, these results support clinical interventions for reducing avoidant coping styles in individuals who have been exposed to ACEs.

Further, we hypothesized that problem-focused coping would mediate the relationship between ACEs and resilience. This hypothesis was not supported as a significant mediation was not found. However, prior research has found similar results. Sheffler and colleagues (2019) did not find a significant mediation of problem-focused coping on the relationship between ACEs and health outcomes, psychiatric symptoms, or psychiatric diagnosis. Additionally, Solberg and colleagues (2023) did not find a significant mediation of adaptive coping on the relationship between ACEs and mental health, smoking, or substance use.

One reason for these findings is due to insignificant *a* and *b* paths. We did not find a significant relationship between ACEs and problem-focused coping, but we did find significant positive relationships between ACEs and harmful coping styles (i.e., avoidant coping, and vigilant coping). These results suggest that ACEs may not decrease the use of helpful coping styles, but rather may increase the use of harmful coping styles. These results support the use of

interventions that attempt to reduce harmful coping styles as ACEs seem to be the most predictive of these coping styles.

However, Sheffler and colleagues (2019) reported a significant negative relationship between ACEs and problem-focused coping, unlike our study. As Sheffler used a different ACE questionnaire than the measure in the current study, it may be that Sheffler's measure is focusing on different kinds of ACEs. For example, Sheffler's measure asks questions about family financial status and parental education, whereas the ACE measure in the current study does not. Therefore, these differences in ACE questions may be driving differences in our findings and future research should analyze specific types of ACEs and their relationship with different types of coping to determine which ACEs have the biggest effect on problem-focused coping.

Further, our study found a significant positive relationship between problem-focused coping and resilience. Whereas Sheffler and colleagues (2019) found a significant negative relationship between problem-focused coping and physical health problems, but no significant relationships between problem-focused coping and psychological symptoms or diagnoses. Together, these insignificant mediations suggest that problem-focused coping is not a variable that can help explain the relationship between ACEs and resilience. Therefore, interventions should focus more on reducing harmful coping styles.

We did not have a hypothesis for religious coping as a mediator of ACEs to resilience, and we did not find any evidence of a mediation. Although we did find that religious coping increased resilience, we did not find a significant main effect of ACEs on religion, due to the reasons described above, which resulted in an insignificant mediated effect.

Additionally, we did not have a hypothesis for vigilant coping as a mediator of this relationship, but we did find that it was a significant mediator. Vigilant coping was one variable

that could explain why those with more ACEs tend to experience lower resilience. These results have similar implications to those of our avoidance coping results. Those who have experienced ACEs are at a heightened risk of utilizing both avoidant and vigilant coping styles. Additionally, both of these coping styles tend to decrease resilience across all indicators (psychological well-being, social well-being, satisfaction with life, and physical health). Therefore, it is important for clinicians to target both avoidant and vigilant coping styles in individuals with ACEs in order to decrease their usage and increase resilience.

Aim 5

Aim 5 examined whether race moderated each path of these mediation models. As prior research on this topic is scarce, we did not have hypotheses, and these were exploratory analyses. Race did not moderate any paths (*a*, *b*, or *c*′) of the emotion-focused coping mediation model, the problem-focused coping mediation model, or the religious coping mediation model. Additionally, moderation of the *b* and *c*′ paths of the avoidant and vigilant coping mediation models were not significant. However, race significantly moderated the *a* path of both the avoidant and vigilant coping mediation models.

White individuals had a greater increase in the use of avoidant coping with each additional ACE. Black individuals also had a positive increase in avoidant coping with additional ACEs, but this increase was smaller than White participants (Figure 7). Additionally, Black individuals showed greater use of avoidant coping at low and average number of ACEs, but White participants surpassed Black individuals in avoidant coping usage at high numbers of ACEs. These results suggest that ACEs may not have the largest impact on usage of avoidance coping in Black individuals. In fact, Black individuals have a consistent usage of avoidant coping

regardless of number of ACEs. In contrast, White individuals seem to be highly impacted by number of ACEs on their use of avoidant coping.

Similar results were found for vigilant coping. White individuals had a greater increase in use of vigilant coping with each additional ACE compared to Black individuals. Black individuals had greater use of vigilant coping across all levels of ACEs, but White and Black vigilant coping was most similar at high levels of ACEs.

This information suggests White participants in clinical settings may not have a great reduction in avoidant and vigilant coping at low levels of ACEs due to their lower use of avoidant and vigilant coping at these levels. However White individuals may benefit most from interventions that attempt to reduce avoidant and vigilant coping at higher levels of ACE.

Our results suggest that variables other than ACEs may be predicting the use of avoidant and vigilant coping in Black individuals. As we controlled for racial discrimination as a covariate in this model, there are a few potential factors that may have an impact on the use of avoidant coping in Black individuals other than those controlled for. First, it may be the case that our racial discrimination measure is not fully capturing all aspects of racial discrimination. Although this measure has been validated, it is specifically measuring direct social interactions in which the individual is treated differently and with less respect than others due to their race. There are many other ways in which individuals can be racially discriminated against other than in these direct social situations. Black individuals may indirectly experience racial discrimination by hearing or seeing someone of their race being treated in these ways. For example, news of police shootings of unarmed Black individuals in the media (e.g., George Floyd, Breonna Taylor, among others) has been shown to reduce the mental health of Black individuals within the states in which the shootings occurred (Bor, et al., 2018). Black individuals may be concerned for their

own safety without having directly experienced these shootings, potentially increasing their use of avoidant coping despite ACEs. Further, racial discrimination can be systematic and result in reduced access to community resources such as physical and mental healthcare which may increase stress in these populations (Kaiser Family Foundation, 2022).

Our results suggest that interventions that attempt to reduce avoidant and vigilant coping may be effective for Black individuals at all levels of ACEs. However, there are potentially more complex variables such as systematic racism which may continue to hinder Black individuals and cannot be changed through therapeutic interventions.

Limitations

This study had several limitations. First, data were collected online using Mechanical Turk which currently contains a concerning number of electronic bots and can have an impact on data quality. However, we utilized a number of modern data quality checks which have been shown to be effective in removing bots and validating Mechanical Turk data (Aguionis et al., 2021; Chmielewski & Kucker, 2020; Cobanoglu et al., 2021).

Second, using online data collection can add bias to sampling. As our participants needed access to a computer and internet to complete our study, we are not capturing those in the population without access to these resources. Future studies should attempt to use other sampling techniques such as community sampling to examine if the current findings can be replicated.

Our third limitation can be viewed as either a benefit or a limitation to the study. We used longitudinal data analyses across two time points 3-month apart. This longitudinal design allowed us to analyze mediation models with more accuracy. However, attrition is a common issue in longitudinal studies, and this study is no exception. Therefore, it is important to replicate the results of the current study in future research.

Fourth, we used subjective measures of ACEs, coping styles, and resilience. These measures may not accurately depict the behaviors of the participants in our sample. Therefore, future studies could use alternative instruments to measure these variables in a more objective way.

Lastly, Black/African Americans in the United States were recruited for this study, but data on regional information and cultural origins (e.g., Caribbean, East African, etc.) were not obtained. This limits our ability to analyze distinctions between the many subcultures within the Black community. Each of these subcultures could show differences in ACEs, use of coping styles, and resilience. Therefore, future studies should gather information on the region of residence and cultural origins of Black participants to determine if there are additional differences in these main variables between subcultures within the racial group.

Conclusions

The current study aimed to expand our understanding of the relationships between ACEs, coping styles, and resilience between Black and White individuals at two time points. This was done by determining the mediated effect of each T1 coping style (emotion-focused, problem-focused, avoidant, religious, vigilant) on the relationship between T1 ACEs and T2 Resilience (psychological wellbeing, social wellbeing, satisfaction with life, physical health). Additionally, group differences between Black and White individuals and moderated effects of race on each path of the mediation models were analyzed.

The results from our study indicate important racial differences in coping styles and resilience. Additionally, the mediated effects found in our study shed light on how to reduce harmful coping styles in individuals with ACEs. Further, our moderated effects suggest that White individuals may gain the most benefit from interventions that reduce avoidant and vigilant

coping at average and high numbers of ACEs. Whereas Black individuals may benefit from these interventions regardless of number of ACEs. Additionally, there may be important variables other than ACEs that predict avoidant and vigilant coping specifically in Black individuals.

As studies on racial differences in these variables and many other psychological variables are scarce, future studies should continue to collect data on ACE, coping styles, and resilience from multiple racial groups. Such research could help identify similarities and differences between these groups and determine underlying explanatory mechanisms (e.g., racial discrimination, cultural differences, etc.). The results from these future studies could provide important insight into daily behaviors across racial groups and may inform the development of appropriate clinical interventions.

References

- Abbott, R., A., Ploubidis, G., B., Huppert, F., A., Kuh, D., Wadsworth, M., EJ., & Croudace, T., J. (2006). Psychometric evaluation and predictive validity of Ryff's psychological well-being items in a UK birth cohort sample of women. *Health and Quality of Life Outcomes*, 76(4). <https://doi.org/10.1186/1477-7525-4-76>
- Abu-Raiya, H., & Pargament, K. I. (2015). Religious coping among diverse religions: Commonalities and divergences. *Psychology of Religion and Spirituality*, 7(1), 24–33. <https://doi.org/10.1037/a0037652>
- Aflakseir, A., & Mahsiyar, M. (2016). The role of religious coping strategies in predicting depression among a sample of women with fertility problems in Shiraz. *Journal of Reproductive Infertility*, 17(2), 117-122.
- Aguinis, H., Villamor, I., & Ramani, R. S. (2021). MTurk research: Review and recommendations. *Journal of Management*, 47(4), 823-837. <https://doi.org/10.1177/0149206320969787>
- Alonso-Tapia, J., Rodríguez-Rey, R., Garrido-Hernansaiz, H., Ruiz, M., & Nieto, C. (2019). Coping, personality and resilience: Prediction of subjective resilience from coping strategies and protective personality factors. *Behavioral Psychology*, 27(3), 375–389.
- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association. <https://doi.org/10.1037/0000165-000>
- Baker, J. P., & Berenbaum, H. (2007). Emotional approach and problem-focused coping: A comparison of potentially adaptive strategies. *Cognition and Emotion*, 21(1), 95–118. <https://doi.org/10.1080/02699930600562276>

- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Bharmal, N., Tseng, C., Kaplan, R., & Wong, M. D. (2012). State-level variations in racial disparities in life expectancy. *Health Services Research*, 47(1), 544-555. 10.1111/j.1475-6773.2011.01345.x
- Blaine, B., & Crocker, J. (1995). Religiousness, race, and psychological well-being: Exploring social psychological mediators. *Personality and Social Psychology Bulletin*, 21(10). <https://doi.org/10.1177/01461672952110004>
- Bor, J., Venkataramani, A. S., Willians, D. R., & Tsai, A. C. (2018). Police killings and their spillover effects on the mental health of black Americans: A population-based, quasi-experimental study. *The Lancet*, 392(10144), 302-310. [https://doi.org/10.1016/S0140-6736\(18\)31130-9](https://doi.org/10.1016/S0140-6736(18)31130-9)
- Buetler, L. E., Harwood, T. M., Kimpara, S., Verdirame, D., & Blau, K. (2011). Coping style. *Journal of Clinical Psychology*, 67(2), 176-183. <https://doi.org/10.1002/jclp.20752>
- Cabonoglu, C., Cavusoglu, M., & Turkutarhan, G. (2021). A beginner's guide and best practices for using crowdsourcing platforms for survey research: The case of Amazon Mechanical Turk (MTurk). *Journal of Global Business Insights*, 6(1), 92-97. <https://www.doi.org/10.5038/2640-6489.6.1.1177>
- Carter, R. T., Lau, M. Y., Johnson, V., & Kirkins, K. (2017). Racial discrimination and health outcomes among racial/ethnic minorities: A meta-analytic review. *Journal of Multicultural Counseling and Development*, 45(4), 232-259. <https://doi.org/10.1002/jmcd.12076>

- Carver, S., C. (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://www.doi.org/10.1207/s15327558ijbm0401_6.
- Center for Behavioral Health Statistics and Quality. (2021). *Racial/ethnic differences in substance use, substance use disorders, and substance use treatment utilization among people aged 12 or older (2015-2019)* (Publication No. PEP21-07-01-001). Substance Abuse and Mental Health Services Administration.
<https://www.samhsa.gov/data/report/raciaethnic-differences-substance-use>
- Center for Disease Control and Prevention. (2009). *Behavioral Risk Factor Surveillance System Survey Data*. Department of Health and Human Services, Centers for Disease Control and Prevention. <https://www.cdc.gov/violenceprevention/aces/ace-brfss.html>
- Chapman, P. L., & Mullis, R. L. (2000). Racial differences in adolescent coping and self-esteem. *Journal of Genetic Psychology*, 161(2), 152-160.
<https://doi.org/10.1080/00221320009596702>
- Chatters, L. M., Taylor, R. J., Bullard, K. M. & Jackson, J. S. (2009). Race and Ethnic Differences in Religious Involvement: African Americans, Caribbean Blacks and Non-Hispanic Whites. *Ethnic and Racial Studies*, 32(7), 1143-
<https://doi.org/1163.10.1080/01419870802334531>
- Chmielewski, M., & Kucker, S. C. (2020). An MTurk Crisis? Shifts in data quality and the impact on study results. *Social Psychology and Personality Science*, 11(4), 464-473.
<https://doi.org/10.1177/1948550619875149>

- Clark, R., Benkert, A. R., & Flack, M. J. (2006). Large arterial elasticity varies as a function of gender and racism-related vigilance in Black youth. *Journal of Adolescent Health, 39*, 562–569. <http://dx.doi.org/10.1016/j.jadohealth.2006.02.012>
- Conway, M. A., Cabrera, O. A., Clarke-Walper, K., Dretsch, M. N., Holzinger, J. B., Riviere, L. A., & Quartana, P. J. (2020). Sleep disturbance mediates the association of adverse childhood experiences with mental health symptoms and functional impairment in US soldiers. *Journal of Sleep Research, 29*(4). <https://doi.org/10.1111/jsr.13026>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71-75. https://doi.org/10.1207/s15327752jpa4901_13
- Dolcos, F., Hohl, K., Hu, Y., & Dolcos, S. (2021). Religiosity and resilience: Cognitive reappraisal and coping self-efficacy mediate the link between religious coping and well-being. *Journal of Religion and Health, 60*(4), 2892-2905. <https://doi.org/10.1007/s10943-020-01160-y>
- Doron, J., Stephan, Y., Boiche, J., & LeScanff, C. (2010). Coping with examinations: Exploring relationships between students' coping strategies, implicit theories of ability, and perceived control. *Educational Psychology, 79*(3), 515-528. <https://doi.org/10.1348/978185409X402580>
- Downey, C., Jacy, Gudmunson, G., Clinton, Pang, C., Yuk, & Lee, K. (2017). Adverse childhood experiences affect health risk behaviors and chronic health of Iowans. *Journal of Family Violence, 32*, 557–564. <http://dx.doi.org/10.1007/s10896-017-9909-4>
- Driscoll, M. W., Reynolds, J. R., & Todman, L. C. (2014). Dimensions of race-related stress and African American life satisfaction: A test of the protective role of collective efficacy.

- Journal of Black Psychology*, 41(5). <https://doi.org/10.1177/00957984145436>
- 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). [https://doi.org/10.1016/s0749-3797\(98\)00017-8](https://doi.org/10.1016/s0749-3797(98)00017-8)
- Gemmell, L. A., Terhorst, L., Jhamb, M., Unruh, M., Myaskovsky, L., Kester, L., & Steel, J. L. (2016). Gender and racial differences in stress, coping, and health-related quality of life in chronic kidney disease. *Journal of Pain and Symptom Management*, 52(6), 806–812. <https://doi.org/10.1016/j.jpainsymman.2016.05.029>
- Goldstein, E., Topitzes, J., Miller-Cribbs, J., & Brown, R. L. (2020). Influence of race/ethnicity and income on the link between adverse childhood experiences and child flourishing. *Pediatric Research*, 89, 1861-1869. <https://doi.org/10.1038/s41390-020-01188-6>
- Green, D. L., Choi, J. J., & Kane, M. N. (2010). Coping strategies for victims of crime: Effects of the use of emotion-focused, problem-focused, and avoidance-oriented coping. *Journal of Human Behavior in the Social Environment*, 20(6), 732–743. <https://doi.org/10.1080/10911351003749128>
- Guidi, J., Lucente, M., Sonino, N., & Fava, G. A. (2020). Allostatic load and its impact on health: A systematic review. *Psychotherapy and Psychosomatics*, 90(1), 11-27. <https://doi.org/10.1159/000510696>
- Hamdan-Mansour, A. M., Puskar, K., & Bandak, A. G. (2009). Effectiveness of cognitive-behavioral therapy on depressive symptomatology, stress and coping strategies among Jordanian university students. *Issues in Mental Health Nursing*, 30(3), 188-196. <http://dx.doi.org/10.1080/01612840802694577>

- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression based approach* (2nd ed.). The Guilford Press.
- Hermans, E. J., Henckens, M. J. A. G., Joels, M., & Fernandez, G. (2014). Dynamic adaptation of large-scale brain networks in response to acute stressors. *Trends in Neurosciences*, 37(6), 304-314. <https://doi.org/10.1016/j.tins.2014.03.006>
- Hillebrant-Openshaw, M. J., & Wong, M. M. (2022). Sleep quality, regularity, and insomnia mediated the relationship between adverse childhood experiences and resilience. *Under Review*.
- Holahan, C. J., Moos, R. H., Holahan, C. K., Brennan, P. L., & Schutte, K. K. (2005). Stress generation, avoidance coping, and depressive symptoms: A 10-year model. *Journal of Consulting and Clinical Psychology*, 73(4), 658-666.
<https://doi.org/10.1037/0022-006X.73.4.658>.
- Hudsonk, D. L., Eaton, J., Lewis, P., Grant, P., Sewell, W., & Gilbert, K. (2016). “Racism?!? . . . Just look at our neighborhoods”: Views on racial discrimination and coping among African American men in Saint Louis. *The Journal of Men's Studies*, 24(2).
<https://doi.org/10.1177/1060826516641103>
- Jenkins, M., Petterson, E., Smith, B., Miller, V., & Russell-Brown, K. (2023). *A look at Florida corrections*. Race and Crime Center of Justice. <https://www.law.ufl.edu/law/wp-content/uploads/2023-A-Look-at-Florida-Corrections-Feb-2023-FINAL.pdf>
- Johnson, D. R., & Young, R. (2011). Toward best practices in analyzing datasets with missing data: Comparisons and recommendations. *Journal of Marriage and Family*, 73(5), 926-945. <https://doi-org.libpublic3.library.isu.edu/10.1111/j.1741-3737.2011.00861.x>
- Kaiser Family Foundation. (2022). *Disparities in health and health care among Black people*.

- Kaiser Family Foundation. <https://www.kff.org/infographic/disparities-in-health-and-health-care-among-black-people/>
- Kentner, A. C., Cryan, J. F., & Brummelte, S. (2019). Resilience priming: Translational models for understanding resiliency and adaptation to early life adversity. *Developmental Psychobiology*, 61(3), 350-375. <https://doi.org/10.1002/dev.21775>
- Keyes, C. M. (1998). Social well-being. *Social Psychology Quarterly*, 61(2), 121-140. <https://doi.org/10.2307/2787065>
- Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeau, E. M. (2005). Experiences of discrimination: Validity and reliability of a self-report measure for population health research on racism and health. *Social Science and Medicine*, 61, 1576-1596. <https://doi.org/10.1016/j.socscimed.2005.03.006>
- Kochanek, K. D., Aria, E., & Anderson, R. N. (2013). *How did cause of death contribute to racial differences in life expectancy in the United States in 2010?* (NCHS Data Brief No. 125). National Center for Health Statistics. <https://www.cdc.gov/nchs/products/databriefs/db125.htm>
- LaBrenz, C. A., O'Gara, J. L., Panisch, L. S., Baiden, P., & Larkin, H. (2020). Adverse childhood experiences and mental and physical health disparities: The moderating effect of race and implications for social work. *Social Work in Health Care*, 59(8), 588-614. <https://doi.org/10.1080/00981389.2020.1823547>
- LaVeist, T. A., Thorpe, R. J., Pierre, G., Mance, G. A., & Williams, D. R. (2014). The Relationships among vigilant coping style, race, and depression. *Journal of Social Issues*, 70(2), 241–255. <https://doi.org/10.1111/josi.12058>
- Lee, R. T., Perez, A. D., Boykin, C. M., Mendoza-Denton, R. On the prevalence of racial

- discrimination in the United States. *PLoS One* 14(1).
<https://doi.org/10.1371/journal.pone.0210698>
- Leipold, B., Munz, M., & Michéle-Malkowsky, A. (2019). Coping and resilience in the transition to adulthood. *Emerging Adulthood*, 7(1), 12-20.
<https://doi.org/10.1177/2167696817752950>
- Little, T. D., Jorgensen, T. D., Lang, K. M., & Moore, W. G. (2014). On the joys of missing data. *Journal of Pediatric Psychology*, 39(2), 151-162. <https://doi.org/10.1093/jpepsy/jst048>
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543–562.
<https://doi.org/10.1111/1467-8624.00164>
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1(2), 130–149. <https://doi.org/10.1037/1082-989X.1.2.130>
- Mayordomo-Rodríguez, T., Meleández-Moral, J.C., Viguer-Segui, P., & Sales-Gala'n, A. (2015). Coping strategies as predictors of well-being in youth adult. *Social Indicators Research*, 122, 479-489. <https://doi.org/10.1007/s11205-014-0689-4>
- Mersky, J. P., Choi, C., Plummer Lee, C., & Janczowski, C. E. (2021). Disparities in adverse childhood experiences by race/ethnicity, gender, and economic status: Intersectional analysis of a nationally representative sample. *Child Abuse & Neglect*, 117, <https://doi.org/10.1016/j.chiabu.2021.105066>
- Milas, G., Martinović Klarić, I., Malner, A., Saftić, V., Šupe-Domić, D., & Slavich, G. M. (2021). The impact of stress and coping strategies on life satisfaction in a national sample of adolescents: A structural equation modeling approach. *Stress and Health*, 37, 1026-

1034. <https://doi.org/10.1002/smi.3050>

Mohamed, B., Cox, K., Diamant, J., & Gecewicz, C. (2021). *Faith Among Black Americans*.

Pew Research Center. <https://www.pewresearch.org/religion/2021/02/16/faith-among-black-americans/>

Monnat, S. M., & Faye Chandler, R. (2015). Long term physical health consequences of adverse childhood experiences. *The Sociological Quarterly*, 56(4), 723–752.

<https://doi.org/10.1111/tsq.12107>

Mosley-Johnson, E., Garacci, E., Wagner, N., Mendez, C., Williams, J. S., & Egede, L. E.

(2019). Assessing the relationship between adverse childhood experiences and life satisfaction, psychological well-being, and social well-being: United States Longitudinal Cohort 1995–2014. *Quality of Life Research*, 28, 907-914.

<https://doi.org/10.1007/s11136-018-2054-6>

Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., Goldman, H., & Steele, H. (2014). Adverse Childhood Experiences (ACEs) Questionnaire and Adult Attachment Interview (AAI): Implications for parent child relationships. *Child Abuse and Neglect*, 38, 224-233. doi:10.1016/j.chiabu.2013.09.004

National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division; Board on Population Health and Public Health Practice, Committee on Community-Based Solutions to Promote Health Equity in the United States. (2017). *Communities in action: Pathways to health and Equity*. The National Academies Press.

<https://doi.org/10.17226/24624>

Nurius, S., Paula, Green, S., Logan-Greene, P., & Borja, S. (2015). Life course pathways of adverse childhood experiences toward adult psychological well-being: A stress process

- analysis. *Child Abuse & Neglect*, 45, 143–153.
<http://dx.doi.org/10.1016/j.chiabu.2015.03.008>
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45, 867-872. <https://doi.org/10.1016/j.jesp.2009.03.009>
- Pavot, W., Diener, E., Colvin, R., C., & Sandvik, E. (1991). Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, 57(1), 149-161.
https://doi.org/10.1207/s15327752jpa5701_17
- Pew Research Insitute (2016). *Links between childhood religious upbringing and current religious identity*. <https://www.pewresearch.org/religion/2016/10/26/links-between-childhood-religious-upbringing-and-current-religious-identity/>
- Plummer, D. L., Slane, S. (1996). Patterns of coping in racially stressful situations. *Journal of Black Psychology*, 22(3). <https://doi.org/10.1177/0095798496022300>
- Poulus, D., Coulter, T. J., Trotter, M. G., & Polman, R. (2020). Stress and coping in esports and influence of mental toughness. *Fronteirs in Psychology*, 11.
<https://doi.org/10.3389/fpsyg.2020.00628>
- Reynolds, P., Hurley, S., Torres, M., Jackson, J., Boyd, P., & Chen, V. W. (2000). Use of coping strategies and breast cancer survival: Results from the Black/White cancer survival study. *American Journal of Epidemiology*, 152(10), 940-949.
<https://doi.org/10.1093/aje/152.10.940>

- Rowell-Cunsolo, T. L., El-Bassel, N., Hart, C. L. (2013). Black Americans and incarceration: A neglected public health opportunity for HIV risk reduction. *Journal of Helath Care for the Poor and Underserved*, 27(1), 114-130. <https://doi.org/10.1353/hpu.2016.0011>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
- Sacks, V., & Murphey, D. (2018). *The prevalence of adverse childhood experiences, nationally, by state, and by race/ethnicity*. Child Trends. <https://www.childtrends.org/publications/prevalence-adverse-childhood-experiences-nationally-state-race-ethnicity>
- Schumaker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling* (4th ed.). Routledge Publishing.
- Schoenmakers, E. C., van Tilburg, T. G., & Fokkema, T. (2015). Problem-focused and emotion-focused coping options and loneliness: How are they related? *European Journal of Aging*, 12, 153-161. <https://doi.org/10.1007/s10433-015-0336-1>
- Sengutta, M., Gaweda, L., Moritz, S., & Karow, A. (2019). The mediating role of borderline personality features in the relationship between childhood trauma and psychotic-like experiences in a sample of help-seeking non-psychotic adolescents and young adults. *Eurpoean Psychiatry*, 56, 84–90. <https://doi.org/10.1016/j.eurpsy.2018.11.009>
- Sesar, K., Simic, N., & Barisic, M. (2010). Multi-type childhood abuse, strategies of coping, and psychological adaptations in young adults. *Croatian Medical Journal*, 51(5), 406-416. <https://doi.org/10.3325/cmj.2010.51.406>
- Shah A, N., Beck, A. F., Sucharew, H. J., Litman, S. Pfefferman, C., Haney, J., Shah, S. S.,

- Simmons, J. M., & Auger, K. A. (2018). Parental adverse childhood experiences and resilience on coping after discharge. *Pediatrics*, 141(4).
<https://doi.org/10.1542/peds.2017-2127>
- 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), 584-609.
<https://doi.org/10.1080/10615806.2019.1638699>
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology*, 58, 119–144. <https://doi.org/10.1146/annurev.psych.58.110405.085705>
- Solberg, M. A., Peters, R. M., Resko, S. M., & Templin, T. N. (2023). Does coping mediate the relationship between adverse childhood experiences and health outcomes in young adults? *Journal of Child and Adolescent Trauma*. <https://doi.org/10.1007/s40653-023-00527-z>
- Steiger, J. H., & Lind, J. C. (1980). *Statistically based tests for the number of common factors* [Paper presentation]. Psychometric Society Annual Meeting, Iowa City, IA, United States.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38, 1–10. <https://doi.org/10.1007/BF02291170>
- U.S. Census Bureau. (2022). *Census Bureau Releases New Educational Attainment Data*. U.S. Census Bureau. <https://www.census.gov/newsroom/press-releases/2022/educational-attainment.html>.
- U.S. Department of Labor. (2020). *Earnings disparities by race and ethnicity*. U.S. Department of Labor. <https://www.dol.gov/agencies/ofccp/about/data/earnings/race-and-ethnicity>

- Utsey, S. O., Ponterotto, J. G., Reynolds, A. L., & Cancelli, A. A. (2011). Racial discrimination , coping, life satisfaction, and self-esteem among African Americans. *Journal of Counseling and Development*, 78(1), 72-80.
<https://doi.org/10.1002/j.1556-6676.2000.tb02562.x>
- Van Gundy, K. T., Howerton-Orcutt, A., & Mills, M. L. (2015). Race, coping style, and substance use disorder among non-Hispanic African American and white young adults in south Florida. *Substance Use & Misuse*, 50(11), 1459–1469.
<https://doi.org/10.3109/10826084.2015.1018544>
- Vassilliere, C. T., Holahan, C. J., & Holahan, C. K. (2016). Race, perceived discrimination, and emotion-focused coping. *Journal of Community Psychology*, 44(4), 524-530.
<https://doi.org/10.1002/jcop.21776>
- Walters, K., Christakis, D. A., & Wright, D. R. (2018). Are Mechanical Turk worker samples representative of health status and health behaviors in the U.S.? *PLoS One*, 13(6).
<https://doi.org/10.1371/journal.pone.0198835>
- Ware, R. D. J., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, 30(6), 473–483.
- Weiss, S. J. (2007). Neurobiological alterations associated with traumatic stress. *Perspectives in Psychiatric Care*, 43(3), 114-122. <https://doi.org/10.1111/j.1744-6163.2007.00120.x>
- Williams, D. R., Yu, Y. A. N., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health:Socio-economic status, stress and discrimination. *Journal of Health Psychology*. <https://doi.org/10.1177/135910539700200305>
- Williams, D. R., (2018). Stress and the mental health of populations of color: Advancing our understanding of race-related stressors. *Journal of Health and Social Behavior*, 59(4),

- 466-485. <https://doi.org/10.1177/0022146518814251>
- World Health Organization (2020). A minimal common outcome measure set for COVID-19 clinical research. *Lancet Infectious Diseases*, 20(8), e192-e197. [https://doi.org/10.1016/S1473-3099\(20\)30483-7](https://doi.org/10.1016/S1473-3099(20)30483-7).
- Worthington, M. A., Mandavia, A., Richardson-Vejlgaard, R. (2020). Prospective prediction of PTSD diagnosis in a nationally representative sample using machine learning. *BMC Psychiatry*, 20. <https://doi.org/10.1186/s12888-020-02933-1>
- Yoon, Y., Cederbaum, J. A., & Schwartz, A. (2018). Childhood sexual abuse and current suicidal ideation among adolescents: Problem-focused and emotion-focused coping skills. *Journal of Adolescence*, 67, 120-128. <https://doi.org/10.1016/j.adolescence.2018.06.009>
- Youssef, N. A., Belew, D., Hao, G., Wang, X., Treiber, F. A., Stefanek, M., Yassa, M., Boswell, E., McCall, W. V., & Su, S. (2017). Racial/ethnic differences in association of childhood adversities with depression and the role of resilience. *Journal of Affective Disorders*, 208, 577-581. <https://doi.org/10.1016/j.jad.2016.10.024>
- Zajacova, A., & Lawrence, E. M. (2018). The relationship between education and health: Reducing disparities through a contextual approach. *Annual Review of Public Health*, 39, 273-289. <https://doi.org/10.1146/annurev-publhealth-031816-044628>
- Zamen, N. I., & Ali, U. (2019). Autonomy in university students: Predictive role of problem focused coping. *Pakistan Journal of Psychological Research*, 34(1). <https://doi.org/10.33824/PJPR.2019.34.1.6>
- Zhang, X., & Monnat, S. M. (2022). Racial/ethnic differences in clusters of adverse childhood experiences and associations with adolescent mental health. *SSM-Population Health*, 17. <https://doi.org/10.1016/j.ssmph.2021.100997>

Appendix A - Measures

Demographics

Please complete the following questions about yourself.

Are you fluent in English?

- Yes
- No

Can you read and write English at least at a 6th grade level?

- Yes
- No

What is your age?

What race do you identify with?

- American Indian or Alaska Native
- Native Hawaiian or Pacific Islander
- Black, African American
- AMENA
- Asian
- White
- Race not listed

What is your gender identity?

- Male
- Female
- Trans Male
- Trans Female
- Genderqueer/Gender Nonconforming/Nonbinary
- Gender identity not listed

What is your sexual orientation?

- Heterosexual or straight
- Gay
- Lesbian
- Bisexual

- Sexual orientation not listed

What is your highest level of education?

- Less than a high school diploma
- Highschool graduate or equivalent (GED)
- Some college
- Bachelor's degree
- Master's degree
- Doctorate degree or equivalent
- Not listed

Have you ever contracted covid-19?

1. Yes
2. No

Everyday Discrimination Scale

In your day-to-day life, how often do any of the following things happen to you?

1. You are treated with less courtesy than other people are.
2. You are treated with less respect than other people are.
3. You receive poorer service than other people at restaurants or stores.
4. People act as if they think you are not smart.
5. People act as if they are afraid of you.
6. People act as if they think you are dishonest.
7. People act as if they're better than you are.
8. You are called names or insulted.
9. You are threatened or harassed.

Recommended response categories for all items:

Almost everyday

At least once a week

A few times a month

A few times a year

Less than once a year

Never

- Follow-up Question (Asked only of those answering “A few times a year” or more frequently to at least one question.): What do you think is the main reason for these experiences? (CHECK MORE THAN ONE IF VOLUNTEERED).

RECOMMENDED OPTIONS

1. Your Ancestry or National Origins
2. Your Gender
3. Your Race
4. Your Age
5. Your Religion
6. Your Height
7. Your Weight
8. Some other Aspect of Your Physical Appearance
9. Your Sexual Orientation

BRFSS Adverse Childhood Experience (ACE) Module

Prologue: I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any question you do not want to answer. All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age—.

- 1) Did you live with anyone who was depressed, mentally ill, or suicidal?
- 2) Did you live with anyone who was a problem drinker or alcoholic?
- 3) Did you live with anyone who used illegal street drugs or who abused prescription medications?
- 4) Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?
- 5) Were your parents separated or divorced?
- 6) How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?
- 7) Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say—
- 8) How often did a parent or adult in your home ever swear at you, insult you, or put you down?
- 9) How often did anyone at least 5 years older than you or an adult, ever touch you sexually?
- 10) How often did anyone at least 5 years older than you or an adult, try to make you touch sexually?
- 11) How often did anyone at least 5 years older than you or an adult, force you to have sex?

Response Options

Questions 1-4

1=Yes
2=No
7=DK/NS
9=Refused

Question 5

1=Yes
2=No
8=Parents not married
7=DK/NS
9=Refused

Questions 6-11

1=Never
2=Once
3=More than once
7=DK/NS
9=Refused

Brief-COPE (Brief-COPE)

Instructions:

The following questions ask how you have sought to cope with a hardship in your life. Read the statements and indicate how much you have been using each coping style.

		I haven't been doing this at all	A little bit	A medium amount	I've been doing this a lot
1	I've been turning to work or other activities to take my mind off things.	1	2	3	4
2	I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
3	I've been saying to myself "this isn't real".	1	2	3	4
4	I've been using alcohol or other drugs to make myself feel better	1	2	3	4
5	I've been getting emotional support from others.	1	2	3	4
6	I've been giving up trying to deal with it.	1	2	3	4
7	I've been taking action to try to make the situation better.	1	2	3	4
8	I've been refusing to believe that it has happened.	1	2	3	4
9	I've been saying things to let my unpleasant feelings escape.	1	2	3	4
10	I've been getting help and advice from other people.	1	2	3	4
11	I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12	I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4
13	I've been criticizing myself.	1	2	3	4
14	I've been trying to come up with a strategy about what to do.	1	2	3	4
15	I've been getting comfort and understanding from someone.	1	2	3	4
16	I've been giving up the attempt to cope.	1	2	3	4

		I haven't been doing this at all	A little bit	A medium amount	I've been doing this a lot
17	I've been looking for something good in what is happening.	1	2	3	4
18	I've been making jokes about it.	1	2	3	4
19	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20	I've been accepting the reality of the fact that it has happened.	1	2	3	4
21	I've been expressing my negative feelings.	1	2	3	4
22	I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
23	I've been trying to get advice or help from other people about what	1	2	3	4
24	I've been learning to live with it.	1	2	3	4
25	I've been thinking hard about what steps to take.	1	2	3	4
26	I've been blaming myself for things that happened	1	2	3	4
27	I've been praying or meditating	1	2	3	4
28	I've been making fun of the situation.	1	2	3	4

Vigilant coping scale

In dealing with day-to-day experiences, how often do you . . .

Response Scale: Almost every day (1) At least once a week (2)

A few times a month (3)

A few times a year (4)

Less than once a year (5)

Never (6)

Questions:

- 1) . . . think in advance about the kinds of problems you are likely to experience?
- 2) . . . try to prepare for possible insults before leaving home?
- 3) . . . feel that you always have to be very careful about your appearance (to get good service or avoid being harassed)?
- 4) . . . carefully watch what you say and how you say it?
- 5) . . . carefully observe what happens around you?
- 6) . . . try to avoid certain social situations and places?

3. Ryff's Psychological Well-Being Scales (PWB), 42 Item version

Please indicate your degree of agreement (using a score ranging from 1-6) to the following sentences.

	Strongly disagree				Strongly agree
1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	1	2	3	4	5 6
2. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5 6
3. I am not interested in activities that will expand my horizons.	1	2	3	4	5 6
4. Most people see me as loving and affectionate.	1	2	3	4	5 6
5. I live life one day at a time and don't really think about the future.	1	2	3	4	5 6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5 6
7. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5 6
8. The demands of everyday life often get me down.	1	2	3	4	5 6
9. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5 6
10. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5 6
11. I have a sense of direction and purpose in life.	1	2	3	4	5 6
12. In general, I feel confident and positive about myself.	1	2	3	4	5 6
13. I tend to worry about what other people think of me.	1	2	3	4	5 6
14. I do not fit very well with the people and the community around me.	1	2	3	4	5 6
15. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5 6
16. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4	5 6
17. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5 6
18. I feel like many of the people I know have gotten more out of life than I have.	1	2	3	4	5 6
19. I tend to be influenced by people with strong opinions.	1	2	3	4	5 6
20. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5 6
21. I have the sense that I have developed a lot as a person over time.	1	2	3	4	5 6

22.	I enjoy personal and mutual conversations with family members or friends.	1	2	3	4	5	6
23.	I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
24.	I like most aspects of my personality.	1	2	3	4	5	6
25.	I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
26.	I often feel overwhelmed by my responsibilities	1	2	3	4	5	6
27.	I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
28.	People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
29.	I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
30.	In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6
31.	It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
32.	I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
33.	For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
34.	I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
35.	Some people wander aimlessly through life, but I am not one of them	1	2	3	4	5	6
36.	My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
37.	I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
38.	I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
39.	I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
40.	I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
41.	I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
42.	When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6

Social Wellbeing

Response options range from strongly (1), moderately(2), or slightly disagree(3) to slightly(4), moderately(5), or strongly agree(6).

1. You don't feel you belong to anything you'd call a community
2. You feel like you're an important part of your community
3. If you had something to say, you believe people in your community would listen to you
4. You feel close to other people in your community
5. You see your community as a source of comfort
6. If you had something to say, you don't think your community would take you seriously
7. You believe other people in society value you as a person
8. You think that other people are unreliable
9. You believe that people are kind
10. You believe that people are self-centered
11. You feel that people are not trustworthy
12. You think that people live only for themselves
13. You believe that people are more and more dishonest these days
14. You think that people care about other people's problems
15. Your behavior has some impact on other people in your community
16. You think you have something valuable to give to the world
17. Your daily activities do not produce anything worthwhile for your community
18. You don't have the time or energy to give anything to your community
19. You think that your work provides an important product for society
20. You feel you have nothing important to contribute to society
21. You believe that society has stopped making progress
22. Society isn't improving for people like you
23. You don't think social institutions like law and government make your life better
24. You see society as continually evolving
25. You think our society is a productive place for people to live in
26. For you there's no such thing as social progress
27. You think the world is becoming a better place for everyone
28. The world is too complex for you
29. Scientists are the only people who can understand how the world works
30. You cannot make sense of what's going on in the world
31. Most cultures are so strange that you cannot understand them
32. You think it's worthwhile to understand the world you live in
33. You find it hard to predict what will happen next in society

Satisfaction with Life Scale

Scale:

Instructions: Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

____ In most ways my life is close to my ideal.

____ The conditions of my life are excellent.

____ I am satisfied with my life.

____ So far I have gotten the important things I want in life.

____ If I could live my life over, I would change almost nothing.

Scoring:

Though scoring should be kept continuous (sum up scores on each item), here are some cut-offs to be used as benchmarks.

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied
- 5 - 9 Extremely dissatisfied

Appendix. SF-36 Questions^a

1. In general, would you say your health is:
2. *Compared to one year ago*, how would you rate your health in general *now*?
3. The following items are about activities you might do during a typical day. Does *your health now limit you* in these activities? If so, how much?
 - a. *Vigorous activities*, such as running, lifting heavy objects, participating in strenuous sports
 - b. *Moderate activities*, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf
 - c. Lifting or carrying groceries
 - d. Climbing *several* flights of stairs
 - e. Climbing *one* flight of stairs
 - f. Bending, kneeling, or stooping
 - g. Walking *more than a mile*
 - h. Walking *several blocks*
 - i. Walking *one block*
 - j. Bathing or dressing yourself
4. During the *past 4 weeks*, have you had any of the following problems with your work or other regular daily activities *as a result of your physical health*?
 - a. Cut down the *amount of time* you spent on work or other activities.
 - b. *Accomplished less* than you would like
 - c. Were limited in the *kind of* work or other activities
 - d. Had *difficulty* performing the work or other activities (for example, it took extra effort)
5. During the *past 4 weeks*, have you had any of the following problems with your work or other regular daily activities *as a result of any emotional problems* (such as feeling depressed or anxious)?
 - a. Cut down the *amount of time* you spent on work or other activities
 - b. *Accomplished less* than you would like
 - c. Didn't do work or other activities as *carefully* as usual
6. During the *past 4 weeks*, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?
7. How much *bodily pain* have you had during the *past 4 weeks*?
8. During the *past 4 weeks*, how much did *pain* interfere with your normal work (including both work outside the home and housework)?
9. These questions are about how you feel and how things have been with you *during the past 4 weeks*. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the *past 4 weeks*

- a. Did you feel full of pep?
 - b. Have you been a very nervous person?
 - c. Have you felt so down in the dumps that nothing could cheer you up?
 - d. Have you felt calm and peaceful?
 - e. Did you have a lot of energy?
 - f. Have you felt downhearted and blue?
 - g. Did you feel worn out?
 - h. Have you been a happy person?
 - i. Did you feel tired?
10. During the *past 4 weeks*, how much of the time has your *physical health or emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)?
11. How TRUE or FALSE is *each* of the following statements for you?
- a. I seem to get sick a little easier than other people
 - b. I am as healthy as anybody I know
 - c. I expect my health to get worse
 - d. My health is excellent

SF-36 Response Choices^a

- 1. Excellent, Very Good, Good, Fair, Poor
- 2. Much better now than one year ago, Somewhat better now than one year ago, About the same as one year ago, Somewhat worse now than one year ago, Much worse than one year ago
- 3. Yes, Limited a lot; Yes, Limited a little; No, Not limited at all
- 4a-d. Yes, No
- 5a-c. Yes, No
- 6. Not at all, Slightly, Moderately, Quite a bit, Extremely
- 7. None, Very mild, Mild, Moderate, Severe, Very severe
- 8. Not at all, A little bit, Moderately, Quite a bit, Extremely
- 9. All of the time, Most of the time, A good bit of the time, Some of the time, A little of the time, None of the time
- 10. All of the time, Most of the time, Some of the time, A little of the time, None of the time
- 11. Definitely true, Mostly true, Don't know, Mostly false, Definitely false

^aCopyright© The MOS Trust, Inc.; 1990. All rights reserved.