THE ROLE OF SUPPORT IN THE ASSOCIATIONS BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND ADULT MENTAL HEALTH

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ABSTRACT

Adverse Childhood Experiences (ACEs) have numerous negative associations with developmental outcomes from early childhood through adulthood, including impaired mental health. Support from others may dampen the effects of ACEs on mental health outcomes such as symptoms of anxiety and depression. The existing research in this area focuses on ACEs as cumulative risk scores, without considering the potential differential impacts of varying forms of childhood adversity. Using data from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III), the current study tested the main effects of ACE type (abuse, neglect, household dysfunction) on the odds of experiencing symptoms of anxiety (general, social, panic disorder) and depression (major depressive episode or major depressive disorder) and evaluated social support as moderating these associations. As a secondary goal, main and moderating associations were evaluated within racial groups (White, Black, Hispanic, Asian/Native Hawaiian/Pacific Islander, and American Indian/Alaska Native), given known disparities in ACEs and in access to and utilization of mental health services among groups that are marginalized. Logistic regression analyses revealed each ACE type increased the odds of mental health symptoms. Social support in adulthood had little buffering effect on adversity experienced in childhood and adult anxiety and depressive symptoms. Parental history of anxiety and depression had a significant impact on the odds of experiencing anxiety and depressive symptoms. Differences among racial groups were also apparent. Findings suggest that further research is necessary to understand the differences in how support can moderate associations between ACEs and mental health outcomes.

To my momma and my Mojo, I owe this all to you.
I will hold you with me always.
I love you.

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LIST OF ABBREVIATIONS

ACEs	Adverse Childhood Experiences
GAD	General Anxiety Disorder
PD	Panic Disorder
SAD	Social Anxiety Disorder
SS	Structural Support
FS	Functional Support
ANHPI	Asian/Native Hawaiian/Pacific Islander
AIAN	American Indian/Alaska Native
CDC	Center for Disease Control
PTSD	Post Traumatic Stress Disorder
BPD	Bipolar Disorder

CHAPTER 1: INTRODUCTION

McLaughlin (2016) defined childhood adversity as "exposure during childhood or adolescence to environmental circumstances that are likely to require significant psychological, social, or neuro-biological adaptation by an average child and that represent a deviation from the expectable environment (pg. 4-5)." Adverse Childhood Experiences (ACEs), a term coined by Felitti and Colleagues (1998), represent a cumulative risk construct consisting of 10 adverse experiences a child may experience before the age of 18, with greater ACE exposure corresponding to increased risks for deleterious mental and physical health outcomes (Felitti et al, 1998). These 10 experiences include emotional abuse, sexual abuse, physical abuse, emotional neglect, physical neglect, household substance abuse, parental separation, household incarceration, household mental illness, and domestic violence (Felitti et al., 1998), and can be categorized in three overarching types: abuse, neglect, and household dysfunction.

Statement of the Problem

A wide body of research has identified the link between early adversity and poor physical, mental, and developmental outcomes both concurrently (e.g., Bandoli et al., 2017; Heim et al., 2008; McLaughlin et al., 2010) and over time (e.g., McKelvey, 2018, 2019, 2020). Felitti's CDC – Kaiser study (1998) was the first large scale study to show that cumulative exposure to ACEs is associated with increased risk for a variety of health risk behaviors and diseases (Lund et al., 2020). ACEs are an unfortunately common occurrence. By 18 years of age, 57.8% of individuals in the U.S. have experienced at least one ACE, while 21.5 % of individuals have experienced three or more ACEs (Giano et al., 2020). The three most common ACEs are emotional abuse (33.5%), parental separation (28.2%), and household substance abuse (26.8%; Giano et al., 2020). Most of the top 10 leading causes of death (ischemic heart disease, any

cancer, stroke, chronic obstructive pulmonary disease, diabetes, and suicide) in the U.S. are also associated with ACEs (CDC, 2021; Felitti et al., 1998).

In examining the effects of ACEs on outcomes, most research to date has placed significant focus on the total number of ACEs in individual experiences, establishing that experiencing four or more ACEs make children significantly more vulnerable to negative outcomes (e.g., CDC, 2017; Lee et al., 2020). For example, a systematic review by Hughes and colleagues (2017) found that four or more ACEs are associated with substance abuse, risky sexual behavior, poor mental health, unhealthy weight and lack of physical exercise, increased exposure and engagement with violence, and overall poor physical health status. ACEs are also associated with lower educational attainment, unemployment, and poverty (Metzler, et al 2017) and with engagement in criminal activity (e.g., Baglivio, 2015; Baglivio et al., 2018; Craig et al., 2017; Fox et al., 2015; Wolff & Baglivio, 2017).

Specific to mental health, ACEs are associated with increased risk for anxiety and depression, both throughout childhood (e.g., Elmore & Crouch., 2020; Kim et al., 2021; Lee et al., 2020) and into adulthood (e.g., Chapman et al., 2004; Liu. 2017). Anxiety and depression are also moderators of the associations between ACEs and negative outcomes such as increased smoking (Patton et al.,1996), increased sleep problems (Park et al., 2021), occurrence of painful medical conditions (Gonzalez et al., 2012; Sachs-Ericsson et al., 2017), and suicidality (e.g., Brodsky & Stanley, 2008; Fuller-Thomson et al., 2016; Wong et al., 2019), underscoring the need to understand how ACEs are related to mental health. By better understanding the associations between ACEs and anxiety and depression, both mental health problems and additional negative outcomes associated with adversity and poor mental health may be decreased.

Studying Adversity by Type

Researchers have been moving away from relying only on the sum of ACEs experienced and towards understanding how individual types of ACEs (e.g., abuse, neglect, or household dysfunction) may differ in associations with negative outcomes, including risk for anxiety and depression (e.g., Clemens et al., 2019; Kim et al., 2021; Lee et al., 2020). Many associations between ACEs and negative outcomes such as depression and anxiety have previously been established using cumulative ACE scores (Felitti, 2009), but many of these associations have not been considered relative to the types of ACEs that may be most robustly related to mental health. To date, studies exploring differential associations have had contradictory findings. In one study, researchers reported that only two forms of ACEs, poor caregiver mental health and domestic violence exposure, were associated with increased odds of internalizing behavior, including anxiety and depression (Hunt, 2017), while other studies found that all forms of ACEs were associated with increased anxiety and depression (Elmore & Crouch, 2020; Lew & Xian, 2019). Specifically, Berzenski and Yates (2011) found that emotional abuse on its own was most strongly related to anxiety and depression compared to other adversities, while a combination of physical and emotional abuse had the strongest ties to conduct problems such as substance use and risky sexual behavior (Berzenski & Yates; 2011). Another study found that individuals experiencing child maltreatment ACEs, defined by experiencing supervisory neglect, emotional neglect, physical abuse, emotional abuse, and sexual abuse, had greater odds of experiencing anxiety and depression compared to individuals experiencing household dysfunction or general low adversity (Lee et al., 2020). Exploration of the associations between specific types of ACEs and outcomes is still limited. By further investigating how some forms of childhood adversity

may have stronger ties to poor mental health outcomes than others, we can inform and strengthen mental health services and intervention.

Prevalence of Anxiety and Depression

Mental illness is defined as any mental, behavior, or emotional disorder in the past year that matches duration criteria as designated in the DSM-IV (NSDUH, 2020). Mental illness is classified as severe if participants state that their mental illness substantially interferes with or limits at least one major life activity. 52.9 million individuals (21%) in the U.S. suffered from some form of mental illness in the past year, while 14.2 million individuals (5.6%) suffered from *severe* mental illness. Two of the most commonly occurring forms of mental health disorders are anxiety and depression (Michaud & Fombonne, 2005), both of which have negative impacts on quality of life. For example, anxiety and depression are associated with lower worker productivity (Kessler et al., 2005), greater relationship conflict (Blazer et al., 1991; Weissman, 1991), and overall, decreased quality of life (Angermeyer & Kilian, 2006).

Anxiety Prevalence

According to the National Institute of Mental Health (NIMH), an estimated 31.1% of adults in the U.S. experience an anxiety disorder at some point in their lives (Harvard Medical School, 2007). Anxiety disorders include panic disorder, generalized anxiety disorder, agoraphobia, specific phobia, social anxiety disorder (social phobia), post-traumatic stress disorder, obsessive-compulsive disorder, and separation anxiety disorder. The 2019 National Center for Health Statistics (NCHS) data brief found that 15.6% of adults 18 and older surveyed experienced mild (9.5%) moderate (3.4%), or severe (2.7%) anxiety symptoms in the past two weeks. In particular, 6.8 million adults, or 3.1% of the United States population are affected by generalized anxiety disorder (GAD), 6 million (2.7% of U.S. population) suffer from panic

disorder, and 15 million adults (7.% of U.S. population) have social anxiety (Harvard Medical School, 2007). Anxiety poses a significant public health burden through high health care utilization and costs (ex., Kessler & Greenberg, 2002; Wittchen., 2002). Felitti (1998) noted that in adults who had experienced four or more ACEs, suicide, alcoholism, and problematic substance use were 12 times more likely to occur.

Depression Prevalence

Major depression, defined as a period of at least two weeks where depressed mood and related symptoms persist (NIMH, 2023) is the most common mental disorder in the United States (GBD, 2017). In 2020, 9.2% of youth 12 years or younger had already experienced a major depressive episode (MDE) in the past 12 months. This occurrence rises to 16.9%, or 4.1 million individuals for youth 12-17, 2.4 million of these adolescents reported experiencing severe impairment due to their MDE (NIMH, 2023). 21 million adults (8.4%) struggle with depression (NIMH, 2020). 14.8 million adults suffered severe impairment from their MDE, with impairment also having the most significant effect among the youngest adult age group. Individuals who experienced ACEs are 1.1-2.7 times more likely to experience lifetime depression than those without ACEs in their history (Kandel & Davies., 1982). Depression exerts a large economic burden on society due to its prevalence and debilitating effects on those who experience it (Greenberg et al., 2015; Marcus & Olfson, 2010). The economic burden of depression was $83.1 billion in the United States alone in 2000, consisting of medical costs, suicide related death costs, and indirect workplace costs (Merikangas et al., 2007).

The Experiences of ACEs Among Individuals from Ethnic-Racial Minorities

When seeking to understand the impact of childhood adversity on mental health outcomes, it is important to examine the ways in which experiences of adversity differ among the

majority groups in the U.S. and ethnic-racial groups that have been minoritized. Specifically, systemic racism creates and perpetuates many inequities that contribute to the occurrence of early adverse experiences (Carr, 2020), as well as contributes to mental health outcomes and resilience. In addition to experiencing a greater number of ACEs, racial/ethnic minorities experience systematic disparities that increase the risk for both physical and mental illness such as poverty and incarceration (Kimmel et al., 2016; Massoglia, 2008). These experiences are linked to toxic stress (Pieterse et al., 2012) that is associated with long term physical and mental health problems (Dube et al., 2004; Goosby et al., 2018; Welborn et al., 2020). ACEs also vary in their frequency (Brockie et al., 2013; Merrick et al., 2018; Slack et al., 2017; Youssef et al., 2017), including variations in the types of ACEs experienced by ethnicity and race (Zhang & Monnat, 2022). In the 2016 National Survey of Children's Health, 61% of Black children nationally had experienced at least one ACE, as had 51% of Hispanic children. This is compared to 40% of White children, and 23% of Asian children (NSCH, 2016) in the U.S. Black and Hispanic children are also more likely to experience family economic hardship, parental separation/divorce, low maternal education, and paternal incarceration compared to their white counterparts (Zhang & Monnat, 2022). Researchers also report a range of findings regarding race and vulnerability to ACEs. Although they experience a larger amount of adversity compared to White children, Black and Hispanic individuals who have experienced ACEs are less likely to report mental health problems, such as anxiety and depression, compared to White individuals with ACEs (Schilling et al., 2007; Turner & Lloyd, 2004; Youssef et al., 2017). Another study suggested Black individuals may be more sensitive to the impact of experiencing numerous adversities (Liu et al., 2020). These findings may be related to the types of childhood adversity being assessed (the seminal 10 ACEs compared to adding additional adversities such as natural

disasters, poverty, etc.). Research to date has not determined an exact reason for these differences in ACEs reported, but suggestions include differences in support systems for people of color, as well as differences in stigmas about mental health which could impact reporting of symptoms, and in beliefs about the availability and quality of mental health services (Fripp & Carlson, 2017; Hingwe 2021; Mental Health, 2001; Youssef et al., 2017).

Experiences of Adversity and the Importance of Social Support

When individuals experience adversity and learn to effectively negotiate, adapt to, and/or manage their sources of adversity or trauma, they are characterized as resilient (Windle, 2010). Because resilience itself cannot be directly measured, researchers look to different factors, such as how individuals cope with stress, that are believed to contribute to resilience. (Masten & Garmezy, 1985; Naglieri et al., 2013). Coping is defined as cognitive and behavioral efforts that are constantly changing to manage specific situations, internal or external, that exceed an individual's resources. These efforts are thought to help maintain well-being under significant stress (Lazarus & Folkman, 1984; Windle 2010). Social support is one of the strongest predictors of resilience in individuals who have experienced adversity through ways such as helping victims feel capable to cope with their experiences (e.g., Gottlieb & Bergen., 2009; Klika & Herrenkohl., 2013; Malhi et al., 2019; Pepin & Banyard., 2006; Southwick et al., 2016). Support within the family and outside the family such as peers, school, and church, can reduce the stress response to adverse events either via the provision of concrete supports or via the perception of available help if needed (Cohen & Willis, 1985). Perceptions of support also allow victims of adversity and trauma to feel capable of coping with their experiences (Gottlieb & Bergen., 2009).

Just one supportive and healthy relationship in a child's life can make the difference in their developmental outcomes after experiences of adversity (Werner, 2000). Myklestad et al.

(2012) found that peer friendships were the strongest protectors against anxiety and depression in adolescence, and Wolff & Carvaca-Sanchez (2019) found that social support (via perceptions of having someone for emotional, tangible, affectionate, social interaction, and/or distraction support) decreased distress in incarcerated men with an ACE history. Despite these findings, there is a gap in understanding the role of social support in moderating the associations between ACEs and adult mental health outcomes in the context of types of ACES and race. Black individuals tend to have larger and stronger extended kin networks compared to their white counterparts, and therefore, tend to be less likely to receive formal health services compared to white individuals (Burton et al., 1995; Choi, 1995; Hatch, 1991; Miller et al., 1994; Mutran, 1985; Silverstein & Waite, 1993; Taylor, 1985). Therefore, it is possible Black participants may report more informal support from individuals (friends, family, teachers, etc.) while white individuals who may be more likely to utilize support from counseling or other formal services (Hall, 2007; Hall, 2012; Olfson et al., 2009).

Theoretical Framework

Numerous theories reinforce the idea that relationships, as a form of support, play a significant protective role for overcoming stress and adversity. Two seminal theories relevant to the study of stress and adversity are Ecological Systems Theory (Bronfenbrenner & Cici, 1994) and Attachment Theory (Ainsworth & Bowlby, 1991). In addition, models of stress and coping, including the Stress Buffering Hypothesis (Cohen & Wills, 1985), provide a relevant framework for the proposed study.

Bioecological Systems Theory

In bioecological systems theory, individuals are influenced by all the systems in their environment, both those with which they have direct interactions and those they do not.

Generally, ACEs occur within the microsystem, or the systems an individual interacts with directly, such as divorce, household incarceration, or household drug/alcohol abuse. Along with an individual's family, many other systems reflecting microsystemic entities, such as an individual's supportive interactions with friends and colleagues, can support individuals if their immediate family is unable to support their needs (Easterbrooks & Goldberg, 1990; NICHD Early Child Care Research Network, 1997, 1998a, 1998b, 1999). The mesosystem (the interactions of these direct systems), and the exosystem (the systems with which the child does not have any direct interaction but still influence the child's life, such as state and federal policies) are also important components of understanding support systems as protective factors. Protective factors in ecological systems theory may exert influence directly on an individual, such as through interactions between the child and a parent or teacher (micro and mesosystem), or indirectly, such as a mother receiving support from her therapist strengthening her ability to support her child (exosystem) (Werner, 1989). The interactions between different systems in a society can allow for children to have optimal opportunities for support in their daily lives.

Numerous studies provide evidence of microsystemic protective processes. For example, youth involvement with supportive teachers (Rutter & Quinton, 1984) and religious institutions (Werner, 1989) are associated with higher levels of resilience. As another example, bioecological systems theory was recently applied to the study of maltreatment and resilience in a study of young adult males (n = 46, 17-25 years of age) who experienced childhood sexual abuse (CSA; Ressel et al., 2018). The bioecological systems model states that by developing proximal processes (the interaction between child and their environment), the genetic potential of a child can be actualized (Bronfenbrenner & Cici, 1994). Bioecological systems theory is helpful in understanding adversity because emphasis is placed on the bidirectional interaction of child and

environment, as well as individual protective for understanding the variance in developmental outcomes (Masten, 2014; Ressel et al., 20118; Rutter, 2013; Ungar, 2011). Resilience research has noted the importance of individual attributes (beliefs, emotional regulation strategies) and their interplay with an individual's environment (e.g., support systems [microsystem] and socio-economic status [macrosystem]).In addition, resilience research has explored how these interactions between attributes and environment may vary over time in their ability to protect against adversity (Chronosystem) (Masten, 2014; Ressel et al., 2018; Rutter, 2013; Ungar, 2011).

Bronfenbrenner's bioecological model was also used as a framework for understanding resilience in sexually abused adolescents (Williams & Nelson-Gardell, 2012). The sample in this study consisted of 237 adolescents (80% female, 11-16 years of age). Proximal processes (Bronfenbrenner & Cici, 1994) of caregiver support, peer relationships, relationships with caregivers, and school engagement were one of several exosystemic factors assessed (Williams & Nelson-Gardell, 2012) and most relevant to this proposed study. Participants with lower levels of caregiver social support showed lower resilience scores (Williams & Nelson-Gardell, 2012). Perceived social support, defined as having individuals a person believes they can count on and that take interest and concern in their wellbeing, is also associated with reduced odds of developing depression after ACE exposure (Von Cheong et al.¸ 2017). Even in a longitudinal study spanning 30 years, social support reduced the effects of child maltreatment on depression (Sperry & Widom., 2013). These existing studies highlight the importance of a range of support systems and types of support in buffering against the effects of child adversity in adulthood.

Attachment Theory

Attachment theory also emphasizes the importance of a supportive caregiver, or a secure base, in healthy childhood development. Secure attachment occurs when caregivers provide

constant sensitive responses and reassurance to their infant's distress and other attachment behaviors, and their child feels safe in their relationship, knowing they can seek out their caregiver for comfort when distress occurs (Ainsworth et al., 1979). Attachment theory is well suited for understanding social support and caregiving processes because it emphasizes the need for security as a fundamental human need for health functioning and development (Feeney & Collins, 2019). Secure attachment is associated with numerous positive outcomes, such as engagement in positive peer relationships such as discussion and play (Martin & Britner, 1999; Thompson, 1999; Weinfield et al., 1999). Attachment quality is also associated with flexibility in frustrating situations, appropriate help seeking from adults, persistence and enthusiasm in problem solving, and understanding of others' emotions. Secure attachment in childhood extends into adult personality such as agreeableness and conscientiousness, as well as lower levels of neuroticism (Young et al., 2019).

Relevant to bioecological systems theory, individuals can form secure attachments with others in their environment such as their peers (NICHD, 1997; Jimenez-Rodriguez et al.,2022). For example, peer attachment relationships predict better psychological adjustment (Jimenez-Rodriguez et al., 2022) and mediate the associations between poor maternal attachment and bullying behavior in adolescence (Charalampous et al., 2019). When individuals become stressed, such as through an adverse childhood experience, they seek proximity to attachment figures (Feeney & Collins, 2019). Forming an attachment to an out-of-home supporter can be vital for development if primary sources of support are unable to create such a bond (Van IJzendoorn & Tavecchio, 1987). In short, high-quality relationships are key components of resilience, including positive connections with others in or outside the family (e.g., through religion, volunteering, work, or school) (Hall, 2007, 2012).

Models of Stress and Coping

Several other recent theories have also emerged regarding the importance of support. The stress and coping perspective posits that social support reduces the impact of stressful events on health through actions such as the provision of advice and reassurance, or simply having the belief that support is available, even if no action is actually being given (Lakey & Cohen, 2000). When individuals who have experienced ACES (Von Cheon et al., 2017), including specific types of ACEs (e.g., Roh et al., 2015; Von Cheong et al., 2017) perceive that they have significant social support, they are less likely to experience depression compared to their counterparts with less perceived social support (Von Cheong et al., 2017). Surprisingly little research has formally examined social support as moderating the associations between ACEs and depression or anxiety. A recent study showed that older adults with greater perceived social support reported less anxiety and depression compared to their counterparts with less perceived social support (McCutchen et al., 2022). Another study found social support moderated the associations between ACEs and depression, but not ACEs and anxiety (Kobrinsky & Siedlecki, 2022). It is possible that when separating depression and anxiety, social support may only be able to protect against symptoms of depression, but not anxiety.

The Stress Buffering hypothesis (Cohen & Willis, 1985) also suggests that higher levels of social support moderate the effect of adversities on child development. Specifically, importance is placed on the perceived availability of interpersonal resources to meet an individual's needs elicited by stressful events (Cohen & Willis, 1985). Perceived support may lower the appraisal of harm from stress and thereby increasing the ability to cope with the stressor. Social support may eliminate or lessen perceived stress which reduces the body's reaction to stress (Cohen & Willis, 1985). For example, Wang and colleagues (2022) applied the

stress buffering theory to a study of Chinese adults who had experienced ACEs. They found that social support dampened the relationship between ACEs and deviant behaviors (Wang et al., 2022). Similarly, McKafferty and colleagues (2018) applied the stress buffering framework and found that the presence of social support networks, specifically support from family and friends, weakened the association between ACEs and psychopathology.

Current Study

Although research has expanded to explore the unique effects of types of ACEs on mental health, as opposed to examining the effects of the total number of ACEs (e.g., Elmore & Crouch, 2020; Gibb et al., 2007; Hunt et al., 2017; Lew & Xian, 2019), as stated above, findings have been inconsistent. In addition, existing studies have not yet explored how support systems as moderators of early adversity may be similar or different among varying ethnic-racial groups. The current study seeks to understand the associations between childhood adverse experiences by age 18 and adult mental health outcomes of anxiety symptoms and depressive symptoms in adulthood.

Using data from the National Epidemiologic Survey on Alcohol and Related Conditions – III (NESARC-III; N = 36,309) provided by the National Association of Alcohol and Drug Abuse (NIAAA), this study proposes three research aims. (1) Test associations between types of ACEs (abuse, neglect, household dysfunction) and anxiety and depressive symptoms (2) Test social support as weakening the associations between ACEs and anxiety and depressive symptoms, and (3) Examine associations between ACEs, social support, and mental health symptoms (anxiety, depression) among ethnic-racial groups. Formal study hypotheses are presented at the conclusion of Chapter two.

CHAPTER 2: LITERATURE REVIEW

As introduced in the prior chapter, ACEs are prevalent among the U.S. population and robustly predict poor outcomes across a variety of domains, including the impacts of ACEs on anxiety and depression. In this chapter, I review the literature relative to: (1) associations between ACEs, anxiety, and depression; (2) current understandings of the differential effects of ACE type on anxiety and depression; (3), the role of toxic stress in the associations between ACEs and negative outcomes; and, (4) of the role of social support, including potential differences in ACEs and social support among varying ethnic-racial groups. I conclude the chapter by describing the current study and study hypotheses.

ACEs, Anxiety, and Depression

While short-term elevated stress may be beneficial and essential for survival, prolonged, high levels of stress can be detrimental to the mind and body (McEwen, 1998; McEwen 2005; McEwen & Seeman, 1999; Shonkoff et al., 2012). It is through this toxic stress that experiences of adversity lead to negative outcomes such as anxiety and depression. Post-traumatic stress disorder (PTSD) after experiences of adversity is also linked to depression and anxiety, as well as an onslaught of other mental health conditions (Smith, 2016). Protecting against anxiety and depression is vital as both are associated with numerous other conditions. Early experiences of adversity are associated with subsequent mental health difficulties in children, such that for every additional ACE a child aged 3-5 has already experienced, the odds of presenting with mental health difficulties increase by 32% (Kerker et al., 2015). Anxiety is often comorbid with other mental health conditions, including depression (Compton et al., 2007; Conway et al., 2006; Kessler, et al., 2005), as well as physical health conditions such as diabetes, irritable bowel syndrome, and cardiac problems (Hoffman et al., 2008). In a review of the literature, Arnow

(2004) found that children who experience neglect, abuse, or serious family dysfunction (ACEs) are more likely to be depressed, have an anxiety disorder, and/or display antisocial behavior compared to their peers without experiences of adversity. Turner and Lloyd (2004) found in their study of 1803 young adults (age 18-23) that the amount of lifetime exposure to adversity was associated with increased risk of depressive and/or anxiety disorders even when controlling for conduct disorders, attention deficit hyperactivity disorder, prior substance dependence, and PTSD symptoms. ACEs are also used to identify at-risk college students, such that college students with an ACE history are at significantly higher risk of anxiety and depression (Karatekin, 2017). To observe the long-term effects of adversity in early childhood, Van Der Vegt (2009) and colleagues explored adult mental health outcomes in 1,521 adults who were adopted as young children. They found that ACEs prior to adoption were associated with both anxiety and mood disorders in later childhood and adulthood. The findings of this study also suggest that even if conditions improve (e.g., through adoption), early adverse experiences can still affect adult psychiatric health.

Differential Effects of ACE Types on Adult Mental Health

A current pursuit in the research on adversity is how associations between adversity and outcomes vary by type of ACE. For example, using exploratory factor analysis (EFA) and Confirmatory Factor Analysis (CFA) on ACE data from the Behavioral Risk Factor Surveillance System (BRFSS; CDC 2008), Ford and colleagues (2014) found three groups within the original 10 ACES. These groups consisted of Household Dysfunction, Emotional and Physical abuse, and Sexual Abuse. This deviation from the cumulative risk score format partially stems from concerns with cumulative risk models of adversity placing equal emphasis on all types of ACEs on the assessed outcome (Anda et al., 2020). This means, for example, a child who experienced

parental divorce, parental incarceration, or household substance abuse would acquire the same ACE score as a child experiencing sexual and/or physical abuse, with no emphasis on how similar or different risks to outcomes are (Lacey & Minnis, 2020). The total score approach also assumes that individuals with the same ACE score, regardless of type, will receive the same benefits from interventions (Lacey & Minnis, 2020). While types of adversity are often interrelated, different forms of adversity may have stronger ties to developmental outcomes than others (Kessler et al., 2010). For example, in a study of 51,945 adults across 9 countries from the World Mental Health Survey Initiative (Kessler & Ustun, 2008), adversities associated with maladaptive family functioning posed the highest risk of later mental disorders (Kessler et al., 2010).

Numerous other studies have provided information relative to subtypes of ACEs (e.g., Breuer et al., 2020; Merrick et al., 2014; Westermair et al., 2018). For example, Westermair et al. (2018) examined differences between household dysfunction ACEs (violence against mother, parental divorce, substance abuse or incarceration of a household member), maltreatment ACEs (emotional and physical neglect, physical abuse), and sexual abuse. They found that household dysfunction ACEs were associated with poor health behaviors such as substance dependency and obesity and lower socioeconomic achievement. Maltreatment ACEs and sexual abuse were associated with suicidal behavior, but only maltreatment ACEs were associated with anxiety disorders, panic disorders, and major depressive disorder, while sexual abuse was associated with dysregulation of bodily sensations such as hunger and pain intensity (Westermair et al., 2018). Macmillan and colleagues (2001) examined psychological outcomes associated with childhood physical and sexual abuse. They found that physical abuse was associated with higher lifetime rates of anxiety disorders and antisocial behaviors compared to individuals without

physical abuse history. Women in MacMillan's study who experienced childhood sexual abuse were also more likely to experience higher lifetime rates of depression, anxiety, and antisocial behaviors than women without an abuse history (MacMillan et al 2001). Elmore and Crouch (2020) separated ACEs by types and found all forms of adversity (aside from economic hardship which was included as an ACE in their study) were associated with anxiety and depression, but more strongly to depression. Another study (Breuer et al., 2020) analyzed clusters of ACEs and mental health outcomes. They found that ACEs clustered into two forms, characterized by direct interactions, such as being sexually abused, and indirect traumatization, such as witnessing violence (Breuer et al., 2020). Neglect (personally) and violence against the mother had the strongest associations with mental health outcomes. Sexual abuse was associated with post-traumatic stress disorder (PTSD) and bipolar disorder (BPD) (Breuer et al., 2020), highlighting differences in mental health outcomes based on the type of ACE experienced. Similar studies (e.g., Westermair et al., 2018) found that ACEs characterizing household dysfunction are associated with poor health behaviors, such as smoking and alcohol dependency. Sexual abuse, as in Breuer's study, was associated with BPD, PTSD, and suicidal behavior as well as dysregulation of bodily sensations, such as pain and hunger. Maltreatment was associated with affective and anxiety disorders (Westermair et al., 2018).

In summary, the most recent ACEs research underscores the need to examine differential effects of ACE type on mental health outcomes. Moreover, while the importance of considering ACEs by type has been clearly documented, the potential differences in the protective power of social supports, depending on the type of ACE, are not yet understood, particularly in the protective power of social support to mental health outcomes.

ACEs and Toxic Stress

While ACEs are linked to a variety of negative outcomes, it is often the stress caused by these experiences of adversity that drive numerous physical and mental health problems (e.g., Branco & Linhares, 2018; Bucci et al., 2016). Stress can be categorized in three levels: positive, tolerable, and toxic (Shonkoff et al., 2005, 2012; Shonkoff, 2010) based on the ability of the stress to cause enduring disruptions due to the intensity and duration of the stress response (Shonkoff et al., 2005, 2012; Shonkoff, 2010). Positive stress is brief and mild and, in children, is often characterized by the availability of a caring adult who can respond to the child's needs and support positive coping to the stressor (Shonkoff, 2012). Examples of positive stress include the first day of school and receiving immunizations. While these experiences may be briefly stressful for a child, they are usually able to recover in a short amount of time. These experiences are deemed positive because they can provide opportunities for children to practice healthy and adaptive responses to stress (Shonkoff, 2012). Tolerable stress responses are triggered when a child is exposed to a nonnormative event or experience that presents more adversity or threat than a positive stress experience (Shonkoff, 2012). Examples include familial death, serious injury or illness, or community-level events such as acts of terrorism (Shonkoff, 2012). Shonkoff (2012) states that the buffering effects of supportive adults reduce the risk of prolonged and excessive activation of the stress response system, hence making the stress tolerable. Stressors can become intolerable when children have no support to assist in their coping and stress responses. Toxic stress, the most dangerous stress response, results from strong, frequent, or prolonged experiences in the absence of support, thereby keeping the stress response system activated (Shonkoff, 2012). These experiences result in lasting changes to the stress response system when a child lacks the protection of a supportive adult relationship (Bucci, 2016;

Shonkoff, 2012). Such changes induce a maladaptive and dysregulated response to stress (Shonkoff et al., 2009), such as those observed in Felitti's original ACE study of multiple stressors (e.g., abuse and neglect, substance abuse, parental mental illness). Potentially toxic stressors, however, may become tolerable when the individual has the necessary support systems to aid in coping (Shonkoff, 2012).

Adversity and the Importance of Support Systems

Support systems have long been a crucial aspect of healthy recovery after experiences of adversity (Branco & Linhares, 2018; Shonkoff 2012). Garmezy (1970) suggested that familial factors such as family cohesion, the availability of a caring family member when parents are not meeting the child's needs, and societal factors, such as support systems outside the family (friends, teachers, coaches, etc.) are crucial to resilience in the face of adversity (e.g., Garmezy, 1970; Shean, 2015).

A lack of social support is a strong predictor of traumatic stress symptoms in populations exposed to psychological trauma (Brewin et al., 2000). When supportive relationships are present, stressful events may offer children the opportunity to observe, learn, and practice healthy adaptive responses such as coping and gaining a sense of control over adversity (Shonkoff, 2012). Social support has been defined as "verbal and non-verbal information or advice, tangible aid, or action that is proffered by social intimates or inferred by their presence and has beneficial emotional or behavioral effects on the recipients" (Gottleib, 1983, p.28). Social support helps individuals process adversity by potentially reducing the effect the event has on neural processing of threat stimuli (Wymbs, 2020). Nurturing relationships also help reduce perceptions, reactions, and physiological responses both during and after a stressful event (Scheuplein, 2022). Brown and Shillington (2017) found that when children with an ACE history

had low levels of adult protective relationships, they were more likely to engage in substance abuse compared to children with an ACE history and higher levels of adult protection, while Laudet et al., (2004) and Bender and Losel (1997) found that supportive networks reduced long term substance abuse. Another study found that among youth, perceived support after ACEs had a significant, positive effect on developmental outcomes (Colarossi & Eccles. 2003; Forster et al., 2015; Forster et al., 2020). Perceived support means the child can identify individuals who are available to provide emotional support and aid (Mehra et al., 2006; Peirce et al., 2000). When youth can identify supportive individuals in their environment, they are more likely to obtain resources necessary for dealing with daily life (Canton, 2015; Pan et al., 2020). However, perceiving these supports as available or accessible to them may be difficult for some children who have experienced adversity. For example, maltreated youth identify fewer individuals in their support systems compared to youth without maltreatment history (Negriff et al., 2015).

Numerous studies have identified the importance of supportive relationships in moderating the associations between ACEs and developmental outcomes. For example, Murthi & Espelage (2005) found that perceived social support from family and friends moderated the associations between childhood sexual abuse and symptoms of depression in female college students. In another study of adults who had experienced maltreatment (sexual and emotional abuse, emotional and physical neglect), perceived social support weakened associations between ACEs and trauma symptoms (Dumont et al., 2007). Adults who perceived support from a spouse showed higher resilience scores than those with lower perceived support (Dumont et al., 2007). In a 2017 study of ACEs and depression, higher ACE exposure was associated with greater odds of depressive symptoms, but this association was dampened for individuals with high perceived social support (Von Cheong et al., 2017). Further, social support moderates the impact of ACEs

on adult mental health, such that adults with more support have fewer mental health difficulties (i.e., more days without feelings of depression, stress, or emotional problems; Nurius et al., 2012). Liu and colleagues (2020) also found differences in overall health (including anxiety and depression) in adults who had experienced ACEs depending on access to protective factors, including support systems, such that greater access to these protective factors resulted in better mental health. However, it is important to note that in Liu's study, the buffering effects of protective factors varied by race (Liu et al., 2020). White participants consistently reported fewer ACEs, greater access to protective factors, and overall better health compared to their Black and Latinx peers. From these findings, Liu hypothesizes that cultural variables play a mediating and/or moderating role in how risk and protective factors impact health by either strengthening or weakening the relationship (Liu et al., 2020). Results like those reported by Liu suggest the need to further explore the ways in which social support may function similarly or differently between ethnic-racial groups.

Experiences of ACEs in Ethnic-Racial Groups

Due to long standing systemic inequalities, persons of color are more likely to experience socioeconomic disadvantage along with a plethora of other barriers that protect against adversity, such as less education, unsafe housing, stress exposure, and lack of access to medical care (Kysar moon, 2020). People of color also suffer the added burden of racism and discrimination that both contribute to and exacerbate negative life events (Williams, 1999). Exposure to adversities over a lifetime is greater among people of color than White individuals, and these experiences exacerbate racial disparities in health (Lewis et al., 2015). There are also differences in the types of adversity experienced based on race. While economic hardship and divorce/separation of a parent are the most common ACEs regardless of race (NSCH, 2016), there are differences in the

next most common ACEs experienced. For White children, the next most common ACE is living with an adult with mental illness, and third is living with an adult with a substance use problem (NSCH, 2016). Parental incarceration is most common for Black children (NSCH, 2016), and they are more likely than both White and Hispanic children to experience the death of a parent or guardian (NSCH, 2016). For Hispanic children, the next two most common are living with an adult with a substance use problem and parental incarceration, respectively. Black children are more likely to experience physical neglect, while White children are more likely to experience emotional neglect (Hussey et al., 2006; Maguire-Jack et al., 2019; Scher et al., 2004). Other ACEs such as divorce are most prevalent for Black children, followed by Hispanic and then White Children (NSCH, 2016; Raley et al., 2015). There are also significant disparities in imprisonment rates by race and in witnessing or experiencing violence in the home/neighborhood with Hispanic and Black children reporting parental incarceration and experiences of violence at a significantly higher level than White children (Mersky & Janczewski, 2018; NSCH, 2016)

Of note, while Black and Hispanic children experience more adversity than White children, Black and Hispanic children who have experienced adversity tend to experience better overall health outcomes compared to White children (Barnes & Bates, 2017; Kysar moon, 2020; Goldstein et al., 2021). For example, in a study on ACEs, immediate family resilience, and child flourishing (e.g., showing curiosity, persistence, and staying calm when faced with a challenge), indicated that while increased ACEs resulted in a steeper decline in immediate family resilience for Black and Hispanic children compared to White children, Black and Hispanic children experienced less decline in child flourishing (Goldstein et al., 2020). Findings were hypothesized to reflect Black and Hispanic families' higher levels of interdependence and social support

outside of their immediate families compared to White children (Johnson-Garner & Meyers, 2003). This study also suggests a hardening effect, such that Black and Hispanic children experience significantly more ACEs than White children (Goldstein et al., 2020) and develop resilience in response to more chronic ACE exposure (Goldstein et al., 2020; McGee et al., 2018). In a systematic review on racial differences in psychological distress, Barnes and Bates (2017) found what was defined as a "Black-White paradox" in that Black individuals had lower rates in prevalence of major depressive disorder compared to White individuals, but higher levels of overall psychological distress (reported by participants when prompted about symptoms, typically asked if symptoms had occurred in the past the past year, the past 30 days, the past 2 weeks, or the past 7 days).

Several possible explanations have been suggested for this finding. First, Black individuals have less access to high quality mental health care and treatment, leading to fewer diagnoses (Barnes & Bates, 2017). Another view holds that these discrepancies are due to under surveying of individuals of color in studies (e.g., Keyes, 2002; Schwartz & Meyer, 2010), but a more recent large-scale household-based study found this paradox persisted among subgroups cross-tabulated by age, sex, and education (Barnes et al., 2013). In addition, differences in stigmas about mental health impact reporting of symptoms as well as in differences in beliefs about the availability and quality of mental health services (Fripp & Carlson, 2017; Hingwe 2021; Mental Health, 2001; Youssef et al., 2017) could play a role. Therefore, there currently is no consensus on what could be responsible for this "Black-White Paradox".

Variations in the Role of Social Support by Ethnic-Racial Status

As mentioned above, other studies have explored the possibility that the lower prevalence of depression in Black individuals may be valid, and due to a more prominent presence of

protective factors in the lives of Black individuals such as religion, identity, and social support (Mouzon, 2013). Longstanding research suggests the importance of kin networks in supporting individuals who have faced adversity, particularly for minority populations (e.g., Garcia-Collet al., 1996; Hall, 2007; Hall, 2012). While recent literature reconfirming these findings is limited, seminal research has consistently characterized differences in dependence on kin systems for support. For example, Hays and Mendal (1972) found that compared to White families, Black families interact with extended kin more frequently and deemed those relationships more significant. This was posed as a protective factor that buffered against a racially hostile environment (Hays & Mendel, 1972). Hall (2012) discusses the importance of extended and fictive kin networks for resilience developing during times of slavery. Hall places importance on the development of multiple attachment relationships in supporting resilience in children of alcoholics, particularly African American children of alcoholics. Children of alcoholics are more likely to form multiple attachments which can assist them in withstanding the deleterious effects of ACEs such as household alcoholism (Hall, 2012). Hence, the existing literature described here suggests that use of social support may differ by racial group. The current study addresses an important gap in the current literature by examining whether associations between ACEs, social support, and mental health differ among racial groups.

Summary of the Current Literature

To briefly summarize the current literature: (1) ACEs are linked to greater anxiety and depression; (2) accumulation of ACEs, particularly the experience of four or more ACEs, is consistently associated with increased risk for negative developmental outcomes, but study of ACEs as a cumulative number places all types of adversity at the same risk level (i.e., divorce and abuse); (3) toxic stress results from prolonged activation of the stress response system due to

a lack of coping mechanisms and support systems; (4) support systems play a significant role in helping children who experience adversity to cope with their experiences and manage the stress that comes with adversity; and (5) systemic racism and chronic disadvantage experienced by people of color increases the likelihood of experiencing adversity. The associations between ACEs and mental health outcomes of anxiety and depression, as well as the importance of social support in recovering from adversity have been well established. However, these associations have not been explored among varying ACE types, including the potential buffering role of support in associations between types of ACEs and mental health. Further, little work has addressed how ACEs and social support may differ among ethnic-racial groups. To further extend this area of research, the current study (1) measures the direct associations between type of ACE group (abuse, neglect, household dysfunction) and anxiety and depression symptoms; (2) tests the moderating effects of social support in the associations between type of ACE and mental health outcomes; and (3) assesses group differences by race in the direct and moderating associations.

Current study aims are as follows:

Aim 1: Assess the associations between different types of ACEs and symptoms of anxiety and depression.

Hypothesis 1a*:* Abuse and neglect will be more robustly related (i.e., operationalized as larger effect sizes) to all anxiety type symptoms relative to household dysfunction.

Hypothesis 1b: Abuse and neglect will be more robustly related (i.e., operationalized as larger effect sizes) to depressive symptoms relative to household dysfunction.

***Hypothesis 1c*.** Abuse will be most robustly related (i.e., operationalized as larger effect sizes) to anxiety type symptoms while neglect will be most robustly related to the effect on depressive symptoms.

Aim 2: Test social support as moderating associations between ACEs and anxiety symptoms and/or depression symptoms.

Hypothesis 2. Greater perceived social support will weaken the associations between all types of ACEs and symptoms of anxiety and depression.

Aim 3. Examine associations between ACEs, social support (structural support and functional support) as a moderator, and symptoms of anxiety and depression between racial groups.

Hypothesis 3a. Structural support will show larger effects for individuals of color compared to White participants.

Hypothesis 3b. Functional support moderation will show larger effects for individuals of color compared to White participants.

While ACEs and social support are the key focus of the current study, there are other factors to consider that may also relate to the odds of anxiety and depression symptomology in adulthood. Key covariates in the study included the following, given the rationales provided: Age, sex, education, income, miliary experience, and parent history of anxiety and/or depression. Age is included as a covariate given potential differences in reports of ACEs related to age; for example, younger adults may be more likely to report ACEs (NSDUH,2020). Emerging data indicates that the types of ACEs experienced differ by sex (McAnee et al., 2019). Lower income is generally correlated with greater ACEs, although ACEs occur at all income levels (Halfon et al., 2017; Schaefer et al., 2018). In addition, income plays a role in the ability to access mental health resources, such as counseling (Nurius et al., 2016). Education is correlated with income

and associated with parenting practices that may relate to children's adverse experiences (Davis-Kean, 2005; Davis-Kean et al., 2019). Individuals who join the military experience significantly more ACEs in their history compared to the civilian population (Blosnich et al., 2014).

A parent's mental health can transfer to the next generation and increase odds for ACE experiences and children's impaired mental health. Intergenerational transfer of mental health conditions results from biological and behavioral processes, which are related to a concept classically referred to as nature and nurture. Nature highlights the role of genetics and internal characteristics on development, while nurture focuses on the external, environmental components of development (Sameroff, 2010). Both nature and nurture play significant roles in how children develop (Gottlieb, 2007; Johnston & Edwards, 2002). Biologically, children with parents who have mental health conditions may have a genetic vulnerability to mental health conditions themselves (Grabow et al., 2017; Jami et al., 2021; McAdams et al., 2015), including the genetically informed transmission of depression (e.g., Grabow et al., 2017; Jami et al., 2021) and anxiety (e.g., Bolton et al., 2006; Polderman et al., 2015). Certain parts of the genetic code, such as the serotonin transmitter 5-HTTLPR, are associated with increased likelihood for intergenerational transmission of mental health conditions (Oppenheimer et al., 2013). Likewise, parents' anxiety and depression increase the odds of abusive or neglectful parenting practices (Eley et al., 2015; Howe., 2010; Schaeffer et al., 2005), which, as mentioned previously, are associated with numerous negative outcomes such as anxiety, depression, and suicidal behavior (MacMillan et al., 2001; Westermair et al., 2018). Further, a parent's anxiety and depression create an environment lacking in psychological and relational safety as children continually witness parental fear, sadness, anxiety, etc. (Askew & Field; Eley et al., 2015). Children model the reactions they see in their parents to negative stimuli (e.g., Bandura, 1961) in addition to

hearing parental explanations of events that exacerbate a threat, emphasizing anxiety-related information processing (Aktar et al., 2013; Creswell et al., 2011; Eley et al., 2015).

CHAPTER 3: METHODS

Participants and Sampling

The secondary data employed for this study were collected from the participants in the National Epidemiologic Survey on Alcohol and Related Conditions - III (NESARC-III; Grant et al., 2014; Grant et al., 2016). The study included 36,309 non-institutionalized U.S. adults aged 18 or older (*Mage* = 45.63 years, *SD* = 17.53). The NESARC-III was designed to assess the prevalence and correlates of alcohol and other drug use disorders in adults in the United States. Multistage probability sampling was used, with primary sampling including individual counties or groups of contiguous counties. Secondary sampling included groups of U.S. census-defined blocks, and third stage sampling including households within the secondary sampling unit. Eligible adults were randomly selected from each household using a computer assistant personal interviewing screener (CAPI). Eligible adults were 18 years of age or older and not currently in any form of active duty in the military. Homes with three or fewer eligible persons had one individual randomly selected, while homes with four or more eligible persons had two individuals randomly selected. Allowing the selection of multiple sample persons in households with four or more eligible persons was stated by the study designers to be expected to be operationally efficient, without also inflating effects of the design through sample clustering (Grant et al., 2015). Selection algorithms were in homes with mixed race individuals, a strategy designed to give household members of color a higher chance of being selected. The response rate for this study was 60.1%, and data were collected from April 2012 through June 2013. Participants were majority White (52.9%). Participants had a mean age of 45.63 years and income ranged from 1($9,999 or less a year) - 7 ($120,000 or more a year) with a mean between

$30,000 and $34,999 Participants were majority female (*N* = 56.3%). Participant demographic characteristics are reported in Table 1.

Table 1

Demographic Characteristics for the Full Sample and by Race

Variable	**Full Sample** ***N* = 36,309** n (%)	**White** ***N* = 19,194** n (%)	**Black** ***N* = 7766** n (%)
Sex			
Female	20,447 (56.3)	10,639 (55)	461 (59)
Income			
$0 - $9,999	4028 (11)	1630 (9)	1357 (17)
$10,000 – 19,999	6603 (18)	2917 (15)	1872 (24)
$20,000 - $34,999	7854 (22)	3697 (19)	1859 (34)
$40,000 - $59,999	7537 (21)	4146 (22)	1446 (19)
$60,000 - $89,999	4967 (14)	3103 (16)	717 (9)
$90,000 - $119,999	2513 (7)	1701 (9)	287 (4)
$120,000 - $200,000+	2807 (8)	2003 (10)	231 (3)
Education	5490 (15)	1726 (9)	1321 (17)
Less than High	9799 (27)	4835 (25)	2553 (33)
School	7982 (22)	4278 (22)	1868 (24)
HS Diploma/GED	4123 (11)	2392 (13)	844 (11)
Some College	4565 (13)	2931 (15)	630 (8)
2-year degree	1324 (4)	917 (5)	191 (3)
Bachelor's degree	3026 (8)	2115 (11)	359 (5)
Some Graduate Ed.			
Graduate Degree			
Military Experience			
Yes Military	3119 (9)	2130 (11)	605 (8)
Variable	**Hispanic** ***N* = 7037** n (%)	**ANHPI** ***N* = 1801** n (%)	**AIAN** ***N* = 511** n (%)
Sex			
Female	3944 (56)	950 (53)	301 (59)
Income			
$0 - $9,999	775 (11)	194 (11)	75 (15)
$10,000 – 19,999	1473 (21)	218 (12)	126 (25)

Table 1 (cont'd)			
$20,000 - $34,999			
$40,000 - $59,999	1880 (27)	32 (17)	106 (21)
$60,000 - $89,999	1491 (21)	355 (20)	99 (19)
$90,000 - $119,999	807 (12)	283 (16)	57 (11)
Table 1 (cont'd)			
$120,000 -	329 (5)	176 (10)	20 (4)
$200,000+	828 (4)	263 (15)	28 (6)
Education	2174 (31)	191 (11)	78 (15)
Less than High	1980 (28)	286 (16)	145 (28)
School	1403 (20)	292 (16)	141 (28)
HS Diploma/GED	636 (9)	180 (10)	71 (14)
Some College	510 (7)	456 (25)	38 (7.4)
2-year degree	104 (2)	102 (6)	10 (2)
Bachelor's degree	230 (3)	294 (16)	28 (5)
Some Graduate Ed.			
Graduate Degree			
Military Experience			
Yes Military	268 (4)	55 (3)	61 (12)

Data Collection Procedures

Initial contact for the NESARC-III study was made by trained interviewers who were instructed to make up to four in-person visits to households to complete screener questions, and up to four additional in-person contacts to administer both the AUDADIS-5 interview and collect participant saliva samples (not used in the current study). Informed consent was recorded through either hard copy or electronic forms (Grant et al., 2016). Participants indicated whether they (1) agreed to participate in the interview and provide a saliva sample, (2) agreed to participate in the interview only, or (3) preferred not to participate. Using the CAPI system, participants were asked about their background and lifestyle, including age and education, drinking practices, mood, anxiety, behavior, personality, and medical conditions. Respondents received $90 for their participation (Grant et al., 2016).

Measures

Adverse Childhood Experiences (Independent Variable)

ACEs were assessed using 28 questions that asked about adverse experiences prior to age 18, including experiences of physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect, household incarceration, household mental illness, household substance abuse, and witnessing interpersonal violence. As described below, the ACE items yielded three ACE types: abuse (physical, emotional, sexual), neglect (physical neglect, emotional neglect), and household dysfunction (household incarceration, household mental illness, household substance abuse, parental separation, and witnessing interpersonal violence). Table 2 shows each ACE type and its corresponding experiences. As described below, each ACE was converted to a binary variable signifying the presence or absence of the ACE using methods consistent with existing research (e.g., Afifi et al., 2017; McLaughlin et al., 2009; Roos et al.,2013, Roos et al., 2016; Ross et al., 2018). Each question also included an unknown/missing option that was coded in the dataset as a missing value, per the dataset coding manual (Grant, 2015).

Table 2

Summary of Creation of ACE Variables

Abuse (Score 0-3) "Before you were 18…"			
ACE Type	**NESARC - III Question(s)**	**Scale**	**Binary Variable**
Emotional Abuse	How often did a parent/other adult living in your home swear at you or insult you or say hurtful things? How often did a parent/other adult living in your home threaten to hit or throw something at you but didn't do it?	Conflict Tactics Scale (Straus et al., 1996) 1. Never 2. Almost never 3. Sometimes 4. fairly often 5. very often	Deemed occurred if participant responded: "almost never" "sometimes", "fairly often", or "very often" to at least one question.

Table 2 (cont'd)

Physical Abuse	How often did a parent/other adult living in your home push, grab, shove, slap, or hit you? How often did a parent/other adult living in your home hit you so hard that you had marks or bruises or were injured?	Conflict Tactics Scale (Straus et al., 1996) 1. Never 2. Almost never 3. Sometimes 4. fairly often very often	Deemed to have occurred if participants responded: "almost never" "sometimes", "fairly often", or "very often" to at least one question.
Sexual Abuse	How often did an adult/other person touch or fondle you in a sexual way when you didn't want them too or were too young to know what was happening? How often did an adult/other person how you touch their body in a sexual way when you didn't want to or were too young to know what was happening? How often did an adult/other person attempt to have sexual intercourse with you when you didn't want them to or were too young to know what was happening? How often did an adult/other person actually have sexual intercourse with you when you didn't want them to or were too young to know what was happening?	Conflict Tactics Scale (Straus et al., 1996) 1. Never 2. Almost never 3. Sometimes 4. fairly often 5. very often	Deemed to have occurred if participants responded: "almost never" "sometimes", "fairly often", or "very often" to at least one question.
Neglect (score 0-2)	"Before age 18…"		
Emotional Neglect	Felt there was someone in my family who wanted me to be a success.	Childhood Trauma Questionnaire (Bernstein et al., 1994)	

Table 2 (cont'd)

	Felt there was someone in family who helped me feel I was important or special My family was a source of strength and support Felt I was part of a close-knit family Before age 18, someone in my family believed in me	1. Never true 2. Rarely True 3. Sometimes True 4. Often True 5. Very Often True	Deemed to have occurred if participants reported a total score of 15 or less (out of 25)
Physical Neglect	How often were you made to do chores that were too difficult for you or dangerous for someone your age? How often were you left alone or unsupervised when you were too young to be alone? that is before you were 10 years old How often did you go without things you needed like clothes, shoes, or school supplies because a parent/other adult living in your home spent the money on themselves? How often did a parent/other adult living in your home make you go hungry or not prepare regular meals? how often did a parent/other adult living in your home ignore you or fail to get you medical treatment when you were sick or hurt?	Childhood Trauma Questionnaire (Bernstein et al., 1994) 1. Never true 2. Rarely True 3. Sometimes True 4. Often True 5. Very Often True	Deemed to have occurred if participants responded, "almost never" "sometimes", "fairly often", or "very often" to at least one questions

Table 2 (cont'd)

	How often did a parent or other adult living in your home act in any other way that made you afraid that you would be physically hurt or injured?		
Household Dysfunction (Score 0 -5)	**"Before you were 18…"**		
Household Incarceration	Parent/other adult living in home went to jail or prison?	1. Yes 2. No	Occurred if participant answered "yes"
Household Incarceration	Parent/other adult living in home went to jail or prison?	1. Yes 2. No	
Household Substance Abuse	Parent/other adult living in home was a problem drinker/alcoholic Parent/other adult living in home had similar problems with drugs?	1. Yes 2. No	Occurred if participant answered "yes" to at least one of the 2 questions
Witnessing Violence	How often did your father/other adult male push, grab, slap or throw something at your mother/other adult female? How often did your father/other adult male kick, bite, hit your mother/other adult female with a fist or something hard? How often did your father/other adult male repeatedly hit your mother/other adult female for at least a few minutes? How often did your father/adult male threaten your mother/ adult female with a knife/gun or use a knife/gun to hurt her?	5 pt Likert Scale 1. Never 2. Almost never 3. Sometimes 4. fairly often 5. very often	First two items - deemed to have occurred if participants reported sometimes or more frequently. Second two items - deemed to have occurred if participants reported almost never or more frequently. Witnessing violence deemed to have occurred if met criteria for at least one question.

Table 2 (cont'd)

Parental Separation	Did your (biological/adoptive) parents get divorced or permanently stop living together before you were 18?	1.Yes 2. No	Parental Separation occurred if participant answered "yes"

Abuse. Physical and emotional abuse were assessed using the Conflict Tactics Scale (Straus et al., 1996). Sexual abuse was assessed using questions from Wyatt (1985) (Choi et al., 2017; Roos et al., 2013). Two items were used for assessing physical abuse. ***Physical abuse*** items addressed caregivers' violent actions resulting in marks or injuries to respondents. Two items were used for emotional abuse. ***Emotional abuse*** was characterized as caregivers' insults, threats, demeaning, profane, and hurtful remarks to respondents. ***Sexual abuse*** included 4 items that asked participants about sexual experiences that were unwanted and/or occurred before the participant was old enough to understand what was happening (Grant, 2015).

Responses for all items for each form of abuse (physical, emotional, sexual) were scored on a five-point scale as 1 (never), 2 (almost never), 3 (sometimes), 4 (fairly often), or 5 (very often). In line with existing work using the NESARC-III data (e.g., Afifi et al., 2017; McLaughlin et al., 2009; Roos et al., 2013, Roos et al., 2016; Ross et al., 2018), experiences of physical, emotional, or sexual abuse were deemed to have occurred if participants responded, "almost never", "sometimes", "fairly often", or "very often" to at least one question related to the particular abuse experience. Presence/absence scores were combined to create a sum abuse score across the three forms of abuse ranging from 0 - 3 with higher scores indicating greater experiences of abuse. For example, a score of 3 reflects exposure to all three forms of abuse-physical, emotional, and sexual abuse.

Neglect. Questions assessing experiences of physical neglect (six items) and emotional neglect (5 items) were adapted from the Childhood Trauma Questionnaire (Bernstein et al.,

1994; Roos et al., 2013). Items for both physical and emotional neglect were scored on a 5-point Likert scale. ***Physical neglect*** response options included: 1 (Never), 2 (almost never), 3 (sometimes), 4 (fairly often), 5 (very often) or 9 (unknown). Physical neglect was deemed to have occurred if participants responded, "almost never", "sometimes", "fairly often", or "very often" to at least one question related to physical neglect. ***Emotional neglect*** response items included 1(never true), 2 (rarely true), 3 (sometimes true), 4 (often true), and 5 (very often true). Per existing protocols (Dube et al., 2003; Dong et al., 2003), emotional neglect was deemed to have occurred if participants scored equal to or less than 15 out of a total possible 25 points from combing all items on the emotional neglect scale. The absence or presence of both physical and emotional neglect were combined resulting in a total neglect score ranging from 0-2 with higher scores indicating greater experiences of neglect. Hence, a score of 2 reflects exposure to both physical and emotional neglect.

Household dysfunction. The third type of ACE was household dysfunction. Household dysfunction included five experiences including witnessing interpersonal violence (five items), household mental illness (three items), household substance abuse (two items), household incarceration (one item), and parental separation (one item). ***Witnessing interpersonal violence*** was scored on a 5-point scale including 1 (never true), 2 (rarely true), 3 (sometimes true), 4 (often true), and 5 (very often true). In line with existing work (e.g., Ross et al., 2018), the first two questions for witnessing interpersonal violence (i.e., 1. pushed, grabbed, slapped or seeing something thrown at; 2. kicked, bit, hit with a fist or with something hard) were deemed to have occurred if participants reported "sometimes true", "often true", or "very often true". The second two questions (i.e., 3. repeatedly hit; 4. threatened or actually attacked with a knife or gun) were deemed to have occurred if participants reported "almost never", "sometimes", "fairly often", or

"very often". Collectively, a participant could have experienced each of the four items related to witnessing personal violence. For the analyses, witnessing violence was deemed to have occurred if participants met the criteria for witnessing violence with at least one of the 4 items. Items assessing ***household mental illness*** (hospitalized for a mental illness, attempted suicide, or completed suicide) ***household substance use disorders*** (problematic use of alcohol or drugs by someone in household, and ***household incarceration*** (parent or other adult living in their home went to jail or prison), and parental separation (biological or adoptive parents get divorced or permanently stop living together) were coded as yes (occurred), or no (did not occur). Household mental illness and substance use disorders were deemed to be present if participants answer "yes" to at least one of the questions pertaining to that adversity. Only one question assessed household incarceration and parental separation, so they were deemed to be present if participants answered yes to the single item. All household neglect absent or present scores were combined for a possible household dysfunction score ranging from 0 to 5 with higher scores indicating more experiences of household dysfunction. For example, a score of 5 reflects the occurrence of witnessing violence, household mental illness, household substance use, household incarceration, and parental separation.

Anxiety and Depression Symptoms (Dependent Variables)

Psychiatric disorders were diagnosed using the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule – DSM-IV (AUDADIS-IV), a fully structured diagnostic interview designed to be used by non-clinician interviewers. To be categorized with a particular mental health disorder, participants had to meet a specific list of criteria that differed for each type of mental health disorder. Full details of the conditions for diagnoses can be found

in Table 3. Test-retest reliability for the anxiety and depression items in the general population have been reported as fair to excellent (see Grant et al., 2015).

Anxiety. Anxiety types included for the current study include generalized anxiety disorder (GAD), panic disorder (PD), and Social Anxiety Disorder (SAD). GAD symptoms included reporting that excessive anxiety and worry were present more days than not for at least three months in accompaniment with six symptoms. Report options also include having difficulty controlling their symptoms as well as the symptoms causing significant distress or impairment in functioning (Andrews et al., 2010; Uher et al., 2014).

PD symptoms included reporting recurrence of unexpected periods of intense fear or discomfort, in which symptoms associated with panic (e.g., felt dizzy, lightheaded, as if might faint; had tingling or numbness in any part of body) developed and reached high intensity within 10 minutes. These symptoms were joined by a persistent concern for additional attacks (e.g., worried for at least 1 month would have another one), worry over the implications of the attacks (e.g., worried for at least 1 month what might happen if had another attack), or significant changes in behavior because of the attack (e.g., restricted usual activities in any way because of panic attacks) (Comer et al., 2011).

SAD symptoms included participants reporting the presence of persistent fear of one or more social or performance situations in which participants were exposed to unfamiliar people or possible scrutiny from others (e.g., ever had fear of/avoidance of eating or drinking in public, ever had fear of/avoidance of dating). SAD symptoms also included a fear of situations provoking anxiety and avoidance of triggering situations, or that enduring triggering situations would result in intense anxiety or distress (Comer et al., 2011).

Scoring information. Questions for each item on all three anxiety scales (GAD, PD, SAD) were answered yes or no. If a participant selected "unknown" as a response option, the item was scored as missing, per manual protocol (Grant, 2015). Meeting some or all criteria for diagnosis resulted in the participant receiving a score of one. Participants who indicated no symptoms were scored as zero. Scores reflecting the absence or presence of each form of anxiety (GAD, PD, SAD) will be used for analyses.

Depression. Depression types included Major Depressive Disorder (MDE) and Dysthymia (also known as Persistent Depressive Disorder, or PDD). For MDE, participants reported presence or absence of 9 symptoms associated with MDE (see Table 3). Participants also responded to a series of questions about their symptoms and if these symptoms caused significant distress or impairment for the participant (Uher et al., 2014). PDD symptoms included reporting a depressed mood for most all days for at least 2 years or longer. In addition, participants reported the presence of two or more symptoms having occurred during the same period. Finally, criteria included not being without these symptoms for more than two months, (Uher et al., 2014). Questions for both MDE and PDD were answered either yes experienced or no, not experienced (Grant, 2016). If a participant selected "unknown" as a response option, the item was scored with a missing values code, per the dataset protocol (Grant, 2015). Meeting some or all criteria for MDE or PDE resulted in a score of 1 for that diagnosis. Participants who did not have symptoms scored a 0. Symptoms of both MDE and PDE were combined to reflect one depression score. Hence, a final score reflecting the absence or presence of either/both forms of depression was derived for use in analyses.

Table 3

Criteria for Creating Mental Health Variables

Mental Health Category and Condition	Symptoms	Transformation to Binary Scoring
Anxiety		
General Anxiety Disorder (GAD)	1. Uncontrollable and excessive anxiety and worry were present more days than not for at least 3 months 2. At least three of the following six symptoms: a. Feeling restless, keyed up, or on edge b. Being easily fatigued c. Difficulty concentrating or mind going blank. d. Irritability e. Muscle tension f. Sleep disturbance 3. Difficulty controlling worry 4. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.	Questions for all items for anxiety were answered either yes (experienced) or no (not experienced). Participants who reported some to all the criteria received a 1, participants who met no criteria received a 0
Panic Disorder (PD)	1. Recurrence of unexpected periods of intense fear or discomfort 2. Symptoms associated with panic developed and reached high intensity within 10 minutes 3. At least one of the following symptoms: a. Persistent concern for additional attacks b. Worry over the implications of the attacks c. Significant changes in behavior because of the attack	
Social Anxiety Disorder (SAD)	1. Presence of persistent fear of one or more social or performance situations in which participants were exposed to unfamiliar people or possible scrutiny from others 2. Exposure to feared situations provoked anxiety 3. Recognition that the fear was excessive or unreasonable Social anxiety resulted in avoidance of triggering situations, or that enduring triggering situations resulted in intense anxiety or distress	
Depression		
Major Depressive Episode (MDE)	1. Experience at least five of nine symptoms. a. Depressed mood (subjective or observed) b. Loss of interest or pleasure c. Change in weight or appetite d. Insomnia or hypersomnia	Questions for all items for depression were answered either yes (experienced) or no (not experienced).

Table 3 (cont'd)

	e. Psychomotor retardation or agitation (observed) f. Loss of energy or fatigue g. Worthlessness or guilt. h. Impaired concentration or indecisiveness. i. Thoughts of death or suicidal ideation or attempt 2. Two of the five above symptoms had to be related to depressed mood and loss of interest or pleasure. 3. Reported symptoms had to result in significant distress or impairment for the participant.	Meeting all criteria for a diagnosis resulted in the participant receiving a score of one, indicating they met all criteria for those particular diagnoses. Participants who did not meet full criteria received a score of 0.
Dysthymia/ Persistent Depressive Disorder (PPD)	1. Depressed mood for most all days for at least 2 years or longer. 2. Presence of two or more symptoms having occurred during the same period. a. Poor appetite or overeating. b. Insomnia or hypersomnia. c. Low energy or fatigue d. Low self-esteem e. Impaired concentration or indecisiveness f. Hopelessness 3. Report not being without these symptoms for more than two months	

Social Support (Moderating Variable)

Social support was assessed through both structural and functional support from others including friends, peers, and teachers. ***Structural support*** was assessed using 11 items from the Social Network Index (SNI; Cohen 1991) that inquire about the number of individuals from social groups that participants interacted with "socially at least once every two weeks" (Cohen et al., 19691; Grant et al., 2015). Respondents were asked to state a number of contacts from 0 to 50 for each of the items with the exception of three binary (yes/no) items (See Table 4). Respondents indicated non applicable circumstances (e.g., respondent does not attend a church and hence does not have social contacts from church), in which participants received a 0 for total number of support individuals from this area. Due to outliers where several participants reported

large numbers of individuals they contacted every two weeks; structural support data was winsorized to minimize the effect of outliers and place greater significance on reports within the normal curve. While regular contact does not necessarily reflect the quality or type of support, it is a proxy for the regularity of contacts with potentially supportive individuals, particularly since the questions describe the contacts to participants as "social". A detailed description of all variables assessing structural support can be found in Table 4.

Functional support reflected perceived ability to receive appraisal (e.g., advice or guidance), belonging (e.g., empathy, acceptance), and tangible (e.g., physical or financial assistance) social support (Merz et al., 2014). Using the 12-item Interpersonal Support Evaluation List- 12 (ISEL-12; Merz et al., 2014), participants answered questions such as "would be able to find someone to help with chores if sick" and "could easily find a lunch companion" on a four-point scale including 1 (definitely false), 2 (probably false), 3 (probably true), and 4 (definitely true). Negatively worded items (e.g., "don't often get invited to do things with others", "feel that there is no one to share worries and fears with") were reverse scored so that all items were scored in the same direction to reflect a lack or presence of functional support. Items were summed to reflect a total sum score, with a minimum score of 12 and maximum score of 48, with higher scores indicating greater overall functional support. This method is in line with previous studies (e.g., Campbell et al., 2021). A detailed description of all variables assessing functional support can be found in Table 4.

Table 4

Structural and Functional Social Support Variable Construction

Support Type/Question	Response Options	Construct Creation
Structural		
1. Are you married/cohabitating?	1. Yes 2. No	"Yes" responses to items 1, 3, and 4 were scored as 1

Table 4 (cont'd)

2. How many of your grown children do you see or talk to on the phone or internet at least once every 2 weeks?	Number from 0- 15	All 11 structural support items were summed to create a total possible structural support score ranging from 0 – 368
3. Do you see or talk on the phone or internet to any of your parents or other people who raised you at least once every 2 weeks?	1. Yes 2. No	
4. Do you see or talk on the phone or internet to your partners parents at least once every 2 weeks?	1. Yes 2. No	
5. How many other relatives do you see or talk to on the phone or internet at least once every 2 weeks?	Number from 0- 50	
6. How many friends do you see or talk to on the phone or internet at least once every 2 weeks?	Number from 0- 50	
7. How many fellow students or teachers do you talk to socially at least once every 2 weeks, not counting brief encounters at school?	Number from 0- 50	
8. How many people do you work with that you talk to socially at least once every 2 weeks, not counting brief encounters at work?	Number from 0- 50	
9. How many of your neighbors do you visit or talk to at least once every 2 weeks, not counting brief encounters?	Number from 0- 50	
10. How many people involved in your volunteer work or community service do you talk to socially at least once every 2 weeks.	Number from 0- 50	

Table 4 (cont'd)

11. Number of members of other groups contact socially at least once every 2 weeks.	Number from 0- 50	
Functional		
1. Would have a hard time finding someone to take a day drip with me 2. Feel that there is no one to share worries and fears with 3. Would be able to find someone to help with chores if sick 4. Someone to turn to for advice on family problems 5. Could easily find someone to go to movie on spur of moment 6. Someone I could turn to for personal problems 7. Don't often get invited to do things with others 8. Would be difficult to find someone to watch my house if out of town 9. Could easily find lunch companion 10. Someone would get if stranded 10 miles from home 11. Would have a hard time finding someone to help me move 12. Would be difficult to get advice from someone for a family crisis	Response options the same for all functional support questions 1. Definitely false 2. Probably false 3. Probably true 4. Definitely true	Questions 1, 2, 7,9, 12, and 13 were reverse coded so that all items reflected the same direction in amount of support received. (e.g., question 1 was scored so that an answer of reflected a lack of difficulty finding someone to take a trip with them) Items were then summed for total scores ranging from 12 – 48 based on the amount of perceived functional support, higher scores reflect greater functional support

Table 4 (cont'd)

13. Would have a hard time finding someone to help me move	

Race

Race was reported by participants during the screener interview. Participants selected one of five options: 1 (White, non-Hispanic; *n* = 19,194 – 52.9%), 2 (Black, non-Hispanic; *n* = 7,766 – 21.4%), 3 (American Indian/Alaska Native, non-Hispanic [AIAN]; *n* = 511 – 1.4%), 4 (Asian/Native Hawaiian/Other Pacific Islander, non-Hispanic [ANHPI]; *n* = 1,801 – 5%), and 5 (Hispanic, any race; *n* = 7,037 – 19.4%).

Covariates

Participants reported sex with a binary yes or no question. If participant sex was missing, the missing value was imputed to female by the original data collectors. Income was reported on a scale from 1-21. For parsimony of the data, income was collapsed to 7 categories for the current study (see Table 1). Participant military experience were reported with a binary variable of yes, military history, or no, never served. Participants reported the highest grade or year of school completed with 14 options from no formal schooling to higher graduate degree in the original study. Again, for parsimony, these categories were reduced to 7 (see Table 1). Participants in this study also reported on maternal and paternal history of anxiety and depression, answering yes, no, or unknown for each. Two variables were created from these reports for this study: one for parental history of anxiety, and one for parental history of depression. Each variable has a range from 0 – 2. Zero indicates neither parent had the condition; one signifies only one parent had the condition, and two means both parents had the condition. Participants who answered unknown were coded as missing.

Statistical Analyses

Missing Data

The provided NESARC-III dataset was treated for missing data prior to receiving it. Specifically, if participant sex was missing, the participant was coded as female (percent imputed unavailable). Missing data were imputed for age (1.13%), education (0.06%), income (13.1%) and race (percent imputed unavailable) during the weighting process by the original data collectors using one of two methods. For the first method, missing values were replaced with a reported or deducted value using information from the screener or AUDADIS – 5. The second method replaced the missing value with a value from a randomly chose participant with similar data. Full details are available from (Grant et al., 2015). For all other variables, participants who refused to answer or did not know an answer had responses marked as "unknown" in the original data set. For mental health variables in the original study, participants who answered "no" or "unknown" on screener questions were dictated as not at risk for that condition and were not probed further with questions regarding that condition. Therefore, in line with the assumptions of the original study, individuals who answered "unknown" for the screener questions on mental health variables were coded as not having the condition. Hence, there was no missing data on mental health items. Military history and both support variables were also assumed to follow the same guidelines, and, therefore, "unknown" codes were included in the current data set as having not occurred. In the current study, "unknown" responses for ACE variables were counted as missing data rather than as not having occurred to account for the possibility that an unknown code could be given due to refusal to report the occurrence of an ACE. Finally, "unknown" codes for parent mental health history were also left as missing data after AVOVA analyses revealed that participants who indicated "unknown" regarding their parents' histories of anxiety reported

significantly more abuse, neglect, general anxiety symptoms, social anxiety symptoms, panic disorder symptoms and depressive symptoms. They also reported less structural and functional support. This finding will be explained further in the discussion.

Preliminary, Descriptive Analyses

Normality of the data was examined, and descriptive statistics and bivariate correlations were conducted for study variables using SPSS 28.0 (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0).

The study research questions addressed the main effects of ACE type (abuse, neglect, household dysfunction) on anxiety and depressive symptoms (Research Aim 1) and addressed two forms of social support (structural and functional) as moderating ACE type effects on anxiety and depression symptoms (Research Aim 2). Finally, because adverse experiences vary systematically by race, the final step in data analyses examined models by ethnic-racial group (White, Black, Hispanic, ANHPI, AIAN) to identify any different patterns in direct and interactive effects (Research Aim 3).

Primary Analyses

A series of hierarchical binary logistic regression models were employed to test the three research aims. In binary logistic regression models, regression coefficients indicate the predicted change in log odds of the outcome for every one unit increase in the predictor. Binary logistic regression yields odd ratios (*OR*; with relevant confidence intervals) that characterize the odds of the mental health binary outcome (i.e., no symptoms/symptoms) relative to model predictors (ACEs). *ORs* less than 1 indicate the predictor is associated with decreased odds in the outcome; *ORs* equal to 1 suggest no association between the predictor and odds of the outcome; and *ORs* greater than 1 demonstrate the predictor increases the odds of the outcome. For all models, fit

statistics included the likelihood ratio test (with a significant chi square indicating significantly better model fit of the hypothesized model relative to the null model), pseudo-R-square values, specifically the Nagelkerke R^2, and the Wald test. Nagelkerke R^2 square values range between 0 and 1, with larger values indicating greater variance in outcomes explained by model predictors. Although the Hosmer-Lemeshow Test is sometimes used as an indicator of model fit, it is no longer recommended due to its sensitivity to sample size, lack of power, and arbitrariness relative to assessing model fit (Allison, 2013). Therefore, examining effects sizes is a particularly important indicator of model robustness for a sample of this size.

Separate models were analyzed for each ACE type to account for high correlation among ACE types and multicollinearity concerns. Similarly, separate models were computed for each mental health outcome (GAD, PD, SAD, and depressive symptoms). A multinomial logistic regression could have been computed to predict the effects of ACE type on anxiety type classification in a single model; however, individual models predicting classification to no symptoms/symptoms for each form of anxiety provide richer information about the roles of ACEs, social supports, and race.

CHAPTER 4: RESULTS

Correlations and Descriptive Statistics

Correlations (see Table 5) and descriptive analyses (see Table 6) were conducted for study variables using SPSS 28.0 (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0).

Correlations

Abuse was positively correlated with all other ACE variables, all mental health outcomes, parent history of anxiety and depression, education, and military experience. It was negatively correlated with both structural and functional support. Neglect showed the same correlations as abuse, with the addition of positive correlation with age, sex, and income as well. Household Dysfunction was positively associated with all other ACEs and all mental health outcomes, as well as all covariates aside from military history. It was negatively associated with both support variables. For mental health outcomes, all were positively associated with each other. Mental health variables were also positively associated with all covariates aside from GAD symptoms and military history, as well as SAD symptoms and education. Mental health variables were negatively associated with support variables. Both structural and functional support were negatively correlated with all other variables aside from structural support with military history and parent anxiety.

Table 5

Bivariate Correlations Amongst Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	--															
2. Sex	.02**	--														
3. Income	.03**	-.09**	--													
4. Education	-.03**	.01*	.41**	--												
5. Mil. His.	.23**	-.27**	.06**	.07**	--											
6. Abuse	-.01	.00	.01	.05**	.05**	--										
7. Neglect	.01*	-.03**	-.05**	-.05**	.04**	.56**	--									
8. HD	-.12**	.04**	-.06**	-.04**	.01	.33**	.27**	--								
9. GAD	.03**	.08**	-.06**	.01*	-.00	.19**	.15**	.12**	--							
10. PD	-.03**	.12**	-.03**	.04**	-.02**	.21**	.15**	.15**	.27**	--						
11. SAD	-.05**	.07**	-.06**	-.00	-.02**	.18**	.14**	.12**	.25**	.26**	--					
12. Depression	-.01*	.13**	-.05**	.04**	-.03**	.25**	.19**	.18**	.33**	.32**	.24**	--				
13. Par. Anx.	-.03**	.04**	.01*	.07**	-.00	.27**	.20**	.22**	.25**	.24**	.20**	.25**	--			
14. Par. Dep	-.11**	.07**	.01	.08**	-.02**	.28**	.24**	.30**	.24**	.27**	.21**	.35**	.47**	--		
15. Struc. Sup	-.03**	-.03**	.17**	.15**	-.01	-.05**	-.10**	-.06**	-.04**	-.03**	-.07**	-.06**	-.01	-.02**	--	
16. Func. Sup	-.11**	.03**	.19**	.13**	-.04**	-.14**	-.24**	-.05**	-.12**	-.08**	-.13**	-.14**	-.05**	-.06**	.30**	--

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Descriptives

As noted in Table 6 below, abuse, neglect, and household dysfunction were each reported at a mean of less than one occurrence for participants, with abuse experiences reported most often. There was a wide range in reporting both structural and functional forms of support. As noted previously, reports of structural support were quite skewed and were winsorized as a result. For the unadjusted variables, participants reported a mean of 17.31 people with whom they interact with at least every two weeks (structural support). Participants reported a mean of 41.60 people on functional support, reflecting high overall perceived support through way of belonging, appraisal, and tangible supports. Z-scores were used in the hierarchical regression analysis to help with interpretation of the two different forms of support.

Table 6

Means, Standard Deviations, Observed Range of ACEs and Support Variables

	Full Sample			White			Black		
Variables	*M*	*SD*	Observed range	*M*	*SD*	Observed range	*M*	*SD*	Observed range
Abuse	.90	1.01	0-3	.93	1.0	0-3	.89	1.00	0-3
Neglect	.54	.64	0-2	.55	.65	0-2	.49	.61	0-2
HD[1]	.63	.87	0-5	.66	.89	0-5	.64	.84	0-5
SS[2]	17.31	17.68	0-326	18.12	18.26	0-326	15.85	16.79	0-242
FS[2]	41.60	6.25	3-48	41.94	5.93	3-48	41.42	6.15	12-48
	Hispanic			ANHPI			AIAN		
Variables	*M*	*SD*	Observed range	*M*	*SD*	Observed range	*M*	*SD*	Observed range
Abuse	.84	1.01	0-3	.71	.92	0-3	1.25	1.10	0-3
Neglect	.56	.64	0-2	.51	.59	0-2	.70	.68	0-2
HD[1]	.62	.86	0-5	.30	.60	0-4	.99	1.08	0-4
SS[2]	16.40	15.77	0-307	18.46	20.47	0-222	17.19	20.44	0-222
FS[2]	41.26	6.48	4-48	41.00	6.24	3-48	40.68	7.18`	12-48

Note:

[1] HD = Household Dysfunction

[2] SS = Structural Support, FS = Functional Support

ACEs Among Ethnic-Racial Groups. ANOVAs with Bonferroni post hoc tests were used to assess differences in ACE experiences and social support between race groups (Table 7).

Abuse (cumulative physical, emotional, sexual) varied significantly between all ethnic racial groups, F (4, 36195) = 43.42, $p < .001$. Participants who were ANHPI reported the least abuse exposure, $M = .71$, $SD = .93$, and participants who were AIAN reported the most, $M = 1.25$, $SD = 1.10$.

Neglect ACEs also differed significantly between groups, F (4, 36181) = 21.09, $p < .001$. Specifically, participants who were AIAN reported more neglect, $M = .70$, $SD = 68$, as compared to all other groups. Participants who were Black, $M = .49$, $SD = .61$, reported less neglect than did participants who were Hispanic, $M = .56$, $SD = .64$, White, $M = .55$, $SD = .65$, or AIAN. Participants who were Hispanic differed from all groups except White participants. In addition, participants who were ANHPI, $M = .51$, $SD = .59$, also significantly differed from Hispanic participants.

The final ACE category, household dysfunction, also differed significantly between groups, F (4, 36267) = 93.6, $p < .001$. Specifically, participants who were AIAN reported more household dysfunction, $M = .99$, $SD = 1.08$, as compared to any other groups. Also, participants who were White $M = .66$, $SD = .89$ reported more household dysfunction than did participants who were ANHPI $M = .29$, $SD = .60$ or Hispanic $M = .62$, $SD = .85$. Black participants, $M = .63$, $SD = .84$, reported more household dysfunction than did participants who were ANHPI. ANHPI participants reported significantly less household dysfunction than all other groups.

Table 7

Post Hoc Comparisons of ACEs and Support Variables by Race

Variable	Post Hoc Comparisons
Abuse	H > W> B > AI > A
Neglect	H > AI > B, A; W > b
Household Dysfunction	AI > W, B, H, D; D < W, B, H, AI; W > AI
Structural Support	W, A > B, AI
Functional Support	W > B, H, A, AI; B > A

Note:

W = White, B = Black, H = Hispanic, A = ANHPI, AI= AIAN

Anxiety and Depression. Within the full sample of 36,309 participants, 6,847 (19%) participants reported symptoms of general anxiety disorder, 8,179 (23%) participants reported symptoms of panic disorder, 10,505 (29%) participants reported symptoms of social anxiety disorder, and 11,669 (32%) participants reported symptoms of depression. Mental health symptoms also varied by race. See Table 8 for full details.

Social Support. Structural support differed across ethnic-racial groups, F (4, 36304) = 30, $p < .001$. White participants reported more structural support, M = 18.12, SD = 18.26, than Black, M = 15.85, SD = 16.79, and Hispanic participants, M = 16.40, SD = 15.77. Black participants reported less structural report than ANHPI participants M = 18.46, SD = 20.47. AIAN participants, M = 17.19, SD = 20.44, did not significantly differ from any other group in structural support. For functional support, White participants, M = 41.94, SD = 5.94, reported more functional support than all other race groups. Black participants, M = 41.42, SD = 6.15, reported more functional support than ANHPI participants, M = 40.92, SD = 6.24. See Table 8 for Details.

Table 8

Frequencies of Mental Health Conditions in Participants and Parents for the Full Sample and by Race

	Full Sample		White		Black		AIAN		ANHPI		Hispanic	
Mental Health Diagnosis	n	%	n	%	n	%	n	%	n	%	n	%
General Anxiety	6847	19	4026	21	1358	18	134	26	238	13.2	1091	16
Panic Disorder	8179	23	5240	27	1321	17	179	35	223	12	1216	17
Social Anxiety	10,505	29	6171	32	2082	27	189	37	387	22	1676	24
Major Depression	11,669	32	7032	37	2089	27	229	30	402	22.3	1917	27
Parent Anxiety	8493	30	5380	28	1234	16	174	40	275	15	1430	20
Parent Depression	11,168	31	6973	36	1745	22.5	206	40	327	18	1917	27

Primary Analyses

Research Aim 1 addressed the main effects of ACE type on anxiety and depressive symptoms. To address this aim, hierarchical binary logistic regression models were employed, entering model covariates of age, sex, income, military history, and education first. In the second block, parent history of mental health conditions was added. The third block included the primary ACE type predictor (abuse, neglect, or household dysfunction). This model was repeated for each ACE type per type of mental health (GAD, PD, SAD, depression). Research Aim 2 addressed the potential moderating effects of structural and functional social supports on associations between ACEs and mental health. To address this aim, z-scored structural and functional support variables were added in a fourth block. Then, the interaction terms for testing moderation by structural and functional support were added in a fifth block. Finally, Research Aim 3 evaluated each model in the context of race. To address this aim, the above models were repeated within each racial group. To account for multiple testing, a more stringent *p* value ($p < .001$) was considered. As presented in the following results, *p* values were below .001 for all ACE main effects and support main effects. *P* values for interactions were generally above .001 but less than .05. In these cases, more stringent confidence intervals (CI; e.g., 90%) were tested. Findings were maintained with the adjusted CIs; hence, the commonly used 95% CI was retained and reported.

For increased clarity of findings, a simplified summary of is presented in Tables 9 and 10 in the main text. Given the number of tables to present, results are summarized in the text, and detailed output can be found in Tables 1A and 2A in Appendix A, which includes the unstandardized beta values and Wald statistic.

Overview- Full Sample

Full statistical results are presented in the subsections below. Generally, results showed small effects of parental history on all participant mental health outcomes, with parent mental health history predicting increased odds of anxiety and depressive symptoms. ACE types were associated with greater odds for anxiety and depressive symptoms, but effect sizes were negligible. Greater support (generally functional support) reduced odds for anxiety symptoms and depressive symptoms in most models, but, again, effect sizes were negligible. As described below, there were two significant interactions predicting depressive symptoms. Greater functional support weakened the association between household dysfunction and depressive symptoms and strengthened the association between neglect and depressive symptoms. Structural support decreased the association between household dysfunction and SAD symptoms. Of note, all main effect sizes, aside from parent anxiety history (small effects), did not meet the minimum of 1.67 for a small effect size (Chen et al., 2010). Significant associations should be interpreted with caution, given that very small effect sizes suggest minimal practical significance of findings.

Table 9

Summary of Main and Interactive Effects for GAD, PD, SAD, and Depressive Symptoms

Full Sample				
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – I Neglect: Y – I HD: Y - I		Abuse: Y – D Neglect: Y – D HD: Y - D	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	

Table 9 (cont'd)

Income	Abuse: Y – I Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: Y – I HD: Y – I	
Education	Abuse: Y- I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
	SAD		**Depressive Symptoms**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – I Neglect: Y – I HD: Y – I	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: N Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	

Table 9 (cont'd)

ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: Y - D Neglect: Y – D HD: Y - D	Abuse: N Neglect: N **HD: Y - D**	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N **Neglect: Y – I** **HD: Y – D**

Note:
Y =Yes, N = No. I = Increased odds, D= Decreased odds.
[1]GAD, PD, and SAD indicate parent anxiety symptom history, Depression indicates parent depressive symptom history

Anxiety - Full Sample

GAD. Statistical models correctly classified 82% of cases in all three models assessing associations between abuse, neglect, and household dysfunction and GAD symptoms. In addition, the Nagelkerke R^2 was 0.14 for abuse, 0.13 for neglect, and 0.12 for household dysfunction, suggesting the models explained 14%, 13%, and 12% (respectively) of the variance in GAD symptoms. One-unit increases in age and education were associated with increased odds of GAD symptoms for all ACE types. Females also had greater odds of reporting GAD symptoms. One unit increases in income were associated with decreased odds of GAD symptoms (*OR* = 0.92, 95% CI = 0.91-0.94, p <.001).

Parental history of anxiety played a significant role in all models. In the context of abuse, parent anxiety history increased the odds of GAD symptoms by 2.11 (95% CI = 2.03-2.20, p <.001). In the context of neglect, parent anxiety history increased odds of GAD symptoms by 2.22 (95% CI = 2.13-2.32, p <.001), and in the context of household dysfunction, parent anxiety increased the odds of GAD symptoms by 2.23 (95% CI = 2.14-2.33, p < .001). Every one unit

increase in abuse history increased the odds of having GAD symptoms by 1.40 (95% CI = 1.36-1.44, p <.001).

A one unit increase in neglect ACEs was associated with a 1.5 increase in odds (95% CI = 1.45-.59, p <.001) of GAD symptoms, and every one unit increase in household dysfunction increased the odds of GAD symptoms by 1.24 (95% CI = 1.20-1.28, p <.001). Functional support decreased odds of GAD symptoms for abuse (*OR* = 0.80, 95% CI = 0.78 – 0.83, p <.001), neglect (*OR* = 0.81, 95% CI = 0.78 – 0.83, p <.001), and household dysfunction (*OR* = 0.78, 95% CI = 0.76 – 0.80, p <.001) victims. However, structural support did not predict odds of GAD symptoms and neither structural nor functional support moderated the associations between ACEs and the odds of GAD symptoms.

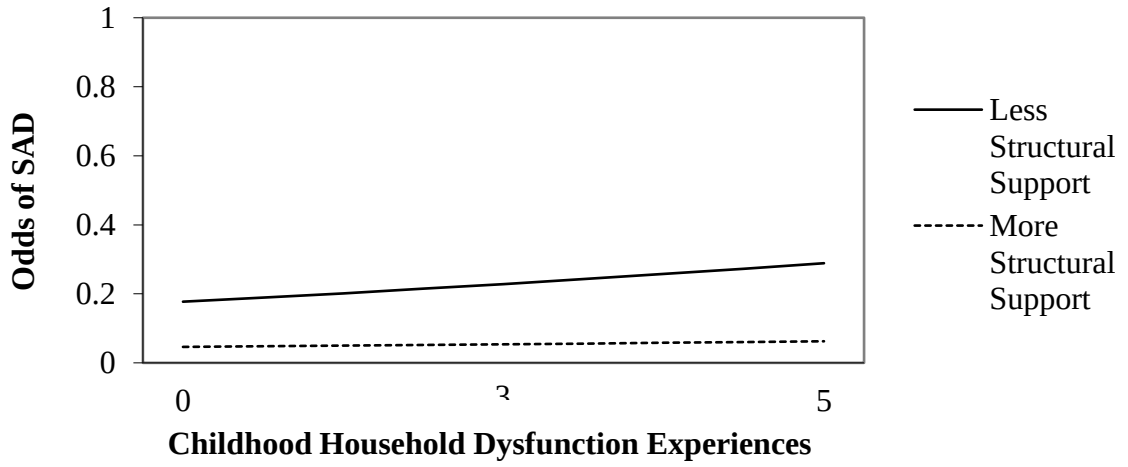
PD. For models assessing associations between each ACE type and panic disorder symptoms, 78% of cases were classified correctly across ACE types. Nagelkerke R^2 was 0.14 for abuse, 0.12 for neglect, and 0.12 for household dysfunction, supporting that the models identified 14%, 12%, and 12% of the variance in PD symptoms, respectively. One unit increases in education were associated with increased odds for PD symptoms for all ACE types, as was being female. In addition, military involvement was associated with increased odds for PD symptoms for victims of neglect and household dysfunction. One unit increases in age and income were associated with decreased odds of PD symptoms. Parental anxiety history again played a role in the models. In the context of abuse, parent anxiety history increased the odds of PD symptoms by 1.89 (95% CI = 1.82-1.97, p < .001), in the context of neglect, parent anxiety increased the odds of PD symptoms by 2.02 (95% CI = 1.964-2.10, p <.001), and in the context of household dysfunction, parent anxiety increased the odds of PD symptoms by 2.02 (95% CI = 1.94-2.10, p <.001). The odds of having PD symptoms in adulthood increased by 1.48 for every one unit

increase in abuse ACEs (95% CI = 1.45-1.52, p <.001), by 1.59 for individuals with one unit increases in neglect ACEs (95% CI = 1.53-1.66, p <.001), and by 1.31 for every one unit increase in household dysfunction (95% CI = 1.27 -1.34, p <.001). Functional support decreased odds of PD symptoms in abuse (*OR* = 0.88, 95% CI = 0.86 – 091, p <.001), neglect (*OR* = 0.89, 95% CI = 0.86 – 0.91, p <.001), and household dysfunction (*OR* = 0.85, 95% CI = 0.82 - 0.87, p <.001) models. Structural support did not affect the odds of PD symptoms, and neither structural nor functional support moderated the associations between ACEs and the odds of PD symptoms.

SAD. The models correctly classified 73% of cases in all three models assessing associations between abuse, neglect, household dysfunction and SAD symptoms. In addition, Nagelkerke R^2 was 0.12 for abuse, 0.10 for neglect, and 0.09 for household dysfunction, finding that the models explained 12%, 10%, and 9% (respectively) of the variance in SAD symptoms. Females had increased odds for SAD symptoms for all ACE types. One unit increases in education were associated with increased odds of SAD symptoms for victims of neglect and household dysfunction. One unit increases in age and income were associated with decreased odds of SAD symptoms for all ACE types. Parental anxiety history increased odds of SAD symptoms. In the context of abuse, parent anxiety history increased the odds of SAD symptoms by 1.71 (95% CI = 1.64 – 1.77, p < .001), in the context of neglect, parent anxiety increased the odds of SAD symptoms by 1.80 (95% CI = 1.73-1.87, p <.001), and in the context of household dysfunction, parent anxiety increased the odds of SAD symptoms by 1.81 (95% CI = 1.74-1.88, p <.001). Regarding main effects, a one unit increases in abuse ACEs increased the odds of having SAD symptoms by 1.37 (95% CI = 1.33-1.40, p <.001). A one unit increase in neglect ACEs was associated with a 1.46 increase (95% CI = 1.40-1.52, p <.001) in odds for SAD symptoms, and a one unit increase in household dysfunction was associated with a 1.20 increase

(95% CI = 1.17-1.23, *p* <.001) in odds of SAD symptoms. Both structural and functional support were directly associated with decreased odds of SAD symptoms. Structural support was associated with decreased odds for SAD symptoms when analyzing abuse (*OR* = 0.93, 95% CI = 0.91 – 0.96, *p* <.001), neglect (*OR* = 0.93, 95% CI = 0.91 - .96, *p* <.001), and household dysfunction (*OR* = 0.93, 95% CI = 0.916 - .96, *p* <.001). Functional support was also associated with decreased odds for SAD symptoms when analyzing abuse (*OR* = 0.80, 95% CI = 0.78 – 0.82, *p* <.001), neglect (*OR* = 0.80, 95% CI = 0.78 – 0.82, *p* <.001), and household dysfunction (*OR* = 0.78, 95% CI = 0.78 - .80, *p* <.001) models. In addition, **less** social support strengthened the association between HD and the odds of SAD symptoms (*OR* = .96, 95% *CI* = .93-.99, *p* = .01; see Figure 1). In the context of greater structural support, there were no differential associations between the degree of HD experiences and odds of SAD symptoms. Again, the effect size was negligible.

Figure 1
Moderation of the association between Household Dysfunction and Odds of SAD Symptoms via Structural Support



Depressive Symptoms- Full Sample

Finally, models of abuse and neglect with depressive symptoms classified 74% of the cases correctly, and 73% were classified correctly for household dysfunction relative to

depressive symptoms. Nagelkerke R^2 for abuse was .22, .21 for neglect, and .20 for household dysfunction, finding these models explained 22%, 21%, and 20% (respectively) of the variance in depressive symptoms. One unit increases in age, education, and being female, were associated with increased odds for depessive symptoms for all ACE types. A one unit increase in income decreased the odds of depressive symptoms for all ACE types. As with the anxiety outcomes, parental depression history increased the odds for depressive symptoms in participants across ACE types. In the context of abuse, parent anxiety increased the odds of depressive symptoms by 2.63 (95% CI = 2.53-2.73, $p < .001$), in the context of neglect, parent anxiety increased the odds of depressive symptoms by 2.80 (95% CI = 2.69-2.90 $p <.001$), and in the context of household dysfunction, parent anxiety increased the odds of PD symptoms by 2.77 (95% CI = 2.67-2.88, $p <.001$). Every one unit increase in abuse experiences was associated with a 1.44 increase (95% CI = 1.41-1.48, $p <.001$) in odds for depressive symptoms. One unit increases in neglect were associated with a 1.50 increase in odds (95% CI = 1.43-1.55, $p <.001$), and household depression was associated with a 1.24 increase in odds (95% CI = 1.20-1.28, $p <.001$). Functional support decreased odds of depressive symptoms in the context of abuse (*OR* = 0.79, 95% CI = 0.77-0.81, $p <.001$), neglect (*OR* = 0.79, 95% CI = 0.77 – 0.81, $p <.001$), and household dysfunction (*OR* = 0.76, 95% CI = 0.74-0.78, $p <.001$). However, structural support was not related to odds of depressive symptoms. Functional support moderated the association between household dysfunction and odds of depressive symptoms (*OR* = 0.97, 95% CI = 0.94 -1.0, $p = .041$). Specifically, **less** functional support strengthened the association between HD and the odds of depressive symptoms (Figure 2). Also, in the context of greater structural support, there were no differential associations between the degree of HD experiences and odds of depressive symptoms Functional support moderated the association between neglect and odds for depressive symptoms

by suggesting an increase in the odds in the association between neglect and depression symptoms (*OR* = 1.04, 95% CI = 1.0 – 1.08, *p* = .028; Figure 3). However, the small effect size and the parallel nature of the graphed slopes minimizes the meaningfulness of the significant moderation.

Figure 2

Moderation of the Association Between Household Dysfunction and Odds of Depressive Symptoms by Functional Support

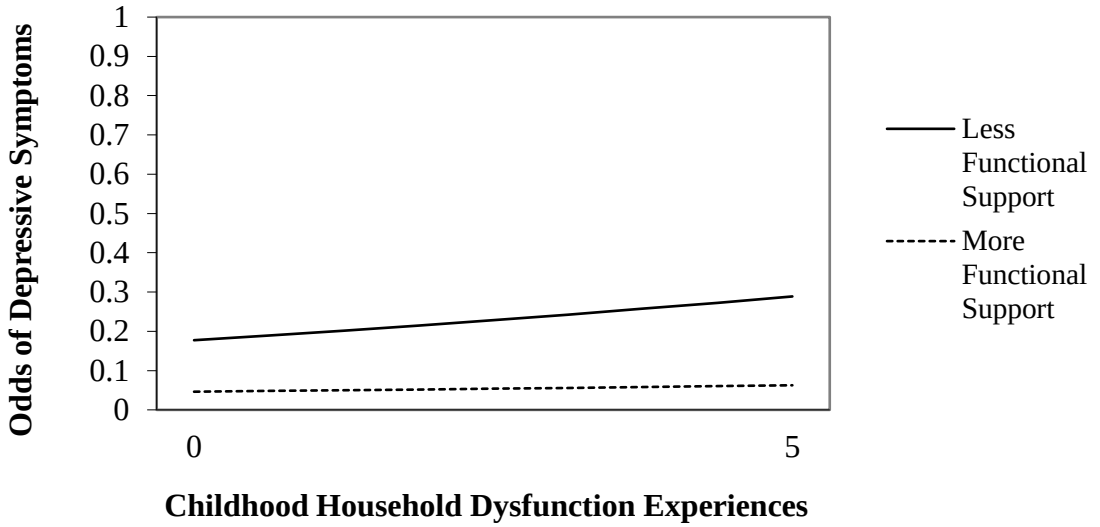
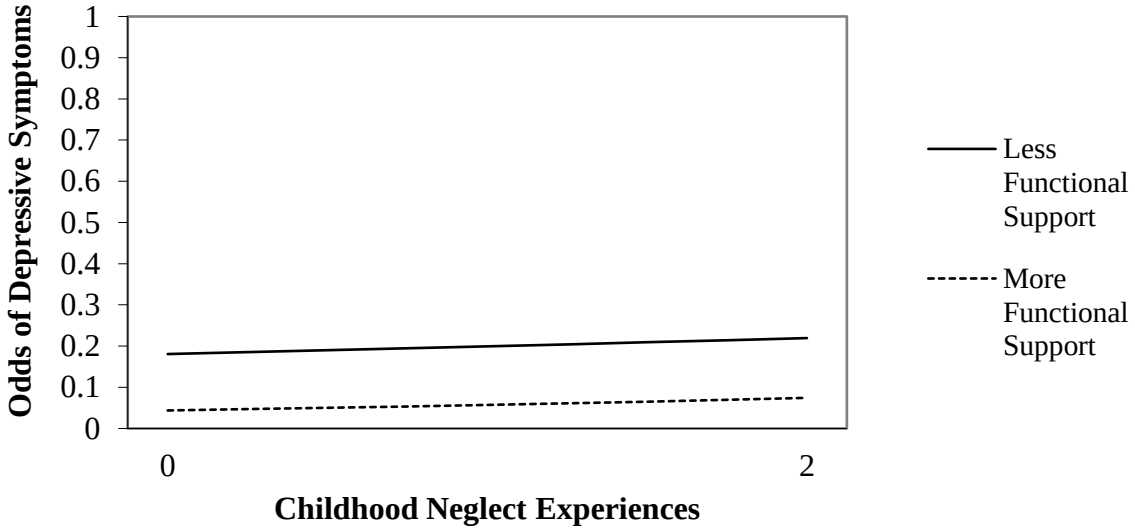


Figure 3

Moderation of the Association Between Neglect and Odds of Depressive Symptoms Functional Support



Overview of Results by Race

Results regarding the main effects of parent mental health history, ACE type, and functional support were largely replicated across Black, White, and Hispanic participants. For White, Black, and Hispanic participants one unit increases in all ACE types were associated with increased odds for all mental health symptoms. Some main ACE effects were not significant in models of ANHPI and AIAN participants. Structural support emerged as a main effect on decreased odds for GAD symptoms among Black participants in the context of abuse, but increased odds of GAD symptoms for Black participants in the context of neglect. Structural support also decreased the odds for SAD symptoms in Hispanic participants in the context of all ACE types. Structural support decreased the odds for GAD symptoms in the context of abuse for AIAN participants, as well as the odds of SAD symptoms for ANHPI participants across ACE types. As in the full sample, there were few significant interactions between ACEs and forms of support. However, structural support moderated the association between abuse and GAD symptoms for Black participants, as well as moderated associations between abuse and depressive symptoms for Hispanic participants. Functional support moderated associations between neglect and SAD symptoms for Hispanic participants, as well as moderated the association between neglect and depressive symptoms for ANHPI participants. As with the full sample, most effect sizes, aside from parent anxiety history, did not meet the minimum of 1.67 for a small effect size (Chen et al., 2010). However, there was a small effect for the association between neglect and PD symptoms.

Table 10

Summary of Main and Interactive Effects for GAD, PD, SAD, and Depressive Symptoms by Race

White				
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: N Neglect: N HD: Y - I		Abuse: Y – D Neglect: Y – D HD: Y - D	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – I Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: N Neglect: N HD: Y – I		Abuse: N Neglect: N HD: N	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
	SAD		**Depression**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: N	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	

Table 10 (Cont'd)

Military Exp.	Abuse: N Neglect: N HD: N		Abuse: Y – D Neglect: Y – D HD: Y – D	
Education	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – I Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: Y - D Neglect: Y – D HD: Y - D	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y - D Neglect: Y – D HD: Y - D	Abuse: N Neglect: N HD: N	Abuse: Y - D Neglect: Y – D HD: Y - D	Abuse: N Neglect: N HD: N
Black				
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – I Neglect: Y – I HD: Y - I		Abuse: N Neglect: N HD: N	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: Y – I HD: Y – I	
Education	Abuse: N Neglect: N HD: N		Abuse: N Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	

Table 10 (cont'd)

Structural Support (SS)	**Abuse: Y – I** Neglect: N HD: N	**Abuse: Y - D** Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
	SAD		**Depression**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: Y – I HD: Y – I	
Education	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Hispanic				
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – I Neglect: Y – I HD: Y - I		Abuse: N Neglect: N HD: N	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	

Table 10 (cont'd)

Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: Y – I Neglect: Y – I HD: Y – I	
Education	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
Variables	**SAD**		**Depression**	
	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – I Neglect: Y – I HD: Y – I	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	

Table 10 (cont'd)

Structural Support (SS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	**Abuse: Y – D** Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N **Neglect: Y – I** HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: N Neglect: Y – D HD: Y - D		Abuse: Y – D Neglect: Y – D HD: Y - D	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: N Neglect: N HD: N		Abuse: Y – D Neglect: Y – D HD: Y – D	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: N Neglect: N HD: Y – I		Abuse: N Neglect: N HD: N	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: N HD: N		Abuse: Y – I Neglect: Y – I HD: Y – I	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
	SAD		**Depression**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: Y – D Neglect: Y – D HD: Y – D	

Table 10 (cont'd)

Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: N Neglect: N HD: N	
Income	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: N	
Structural Support (SS)	Abuse: Y - D Neglect: Y – D HD: Y - D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N
American Indian/ Alaska Native				
	GAD		**PD**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Sex (Female)	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Military Exp.	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Education	Abuse: N Neglect: N HD: Y – I		Abuse: N Neglect: N HD: N	

Table 10 (cont'd)

Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: N Neglect: N HD: N		Abuse: Y – I Neglect: N HD: N	
Structural Support (SS)	**Abuse: Y - I** Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N

	SAD		**Depression**	
Variables	Is there a main effect?	Is there moderation?	Is there a main effect?	Is there moderation?
Age	Abuse: N Neglect: N HD: N		Abuse: Y – I Neglect: Y – I HD: Y – I	
Sex (Female)	Abuse: N Neglect: N HD: N		Abuse: Y – I Neglect: Y – I HD: Y – I	
Income	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Military Exp.	Abuse: Y – D Neglect: Y – D HD: Y – D		Abuse: N Neglect: N HD: N	
Education	Abuse: N Neglect: N HD: N		Abuse: N Neglect: N HD: N	
Parent Symptoms[1]	Abuse: Y – I Neglect: Y – I HD: Y – I		Abuse: Y – I Neglect: Y – I HD: Y – I	
ACE Type	Abuse: Y – I Neglect: N HD: N		Abuse: Y – I Neglect: N HD: N	
Structural Support (SS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N
Functional Support (FS)	Abuse: N Neglect: N HD: N	Abuse: N Neglect: N HD: N	Abuse: Y – D Neglect: Y – D HD: Y – D	Abuse: N Neglect: N HD: N

White Participants - Anxiety

GAD. For White participants, models assessing ACE type to GAD symptoms correctly identified 80% of cases for both abuse and neglect, and 79% of cases for household dysfunction. Nagelkerke R^2 was .14 for abuse, .13 for neglect, and .12 for household dysfunction, identifying 14%, 13%, and 12% (respectively) of the variance in GAD symptoms for White participants. Being female increased odds for GAD symptoms across ACE types. Increased income decreased odds of depressive symptoms for all ACE types. Increased age also increased odds of GAD symptoms in White household dysfunction victims. Parent anxiety increased odds of GAD symptoms by 2.01 (95% CI = 1.91 – 2.12, p <.001) in the context of abuse, 2.09 (95% CI = 1.98-2.20, p <.001) in the context of neglect, and 2.13 (95% CI = 2.02-2.24, p <.001) in the context of household dysfunction. Functional support was associated with decreases in odds for GAD symptoms for all ACE types, abuse (*OR* = 0.80, 95% CI = 0.76-0.83, p <.001), neglect (*OR* = 0.79, 95% CI = 0.76 – 0.83, p <.001), and household dysfunction (OR = 0.77, 95% CI = 0.74 – 0.80, p < .001). One unit increases in abuse were associated with a 1.32 increase in odds for GAD symptoms for White participants (95% CI = 1.27 – 137, p <.001), one unit increases in neglect were associated with a 1.41 increase in odds for GAD symptoms (95% CI = 1.33 – 1.49, p < .001), and one unit increases in household dysfunction were associated with a 1.16 increase in odds GAD symptoms (95% CI = 1.12 – 1.21, p < .001). Neither structural nor functional support moderated the associations between any ACE type and GAD symptoms.

PD. Across PD models, 74% of cases were correctly identified. Nagelkerke R^2 was .14 for abuse, .13 for neglect, and .12 for household dysfunction, explaining 14%, 13%, and 12% (respectively) of the variance in PD symptoms for White participants. As with GAD, females had increased odds for PD symptoms for White participants across ACE types. One unit increases in

income and age decreased odds of PD symptoms for all ACE types. Parent anxiety increased the odds of PD symptoms by 1.77 (95% CI = 1.68-1.86, p <.001) for abuse, 1.86 (95% CI = 1.77-1.95, p <.001) for neglect, and 1.90 for household dysfunction (95% CI = 1.80-2.0, p <.001). Functional support was associated with decreases in odds for PD symptoms for all ACE types, abuse (*OR* = 0.87, 95% CI = 0.83 – 0.90, p <.001), neglect (*OR* = 0.87, 95% CI = 0.83 – 0.91, p <.001), and household dysfunction (*OR* = 0.83, 95% CI = 0.80 – 0.87, p < .001). All ACE types increased the odds of PD symptoms. One unit increases in abuse were associated with a 1.40 increase in odds for PD symptoms for White participants (95% CI = 1.35 – 1.45, p <.001), one unit increases in neglect were associated with a 1.49 increase in odds PD symptoms (95% CI = 1.40 – 1.56, p < .001), and one unit increases in household dysfunction were associated with a 1.18 increase in odds for PD symptoms (95% CI = 1.14 V- 1.23, p < .001). Neither structural nor functional support moderated the associations between any ACE type and odds PD symptoms.

SAD. Across SAD symptom models, 70% of cases were correctly identified. Nagelkerke R^2 was .16 for abuse, .10 for neglect, and .10 for household dysfunction, explaining 16%, 10%, and 10% (respectively) of the variance in SAD symptoms for White participants. Being female increased odds of SAD symptoms for all ACE types. Increased income, age, and education decreased odds of SAD symptoms for all ACE types. Parent anxiety increased the odds of SAD symptoms by 1.64 (95% CI = 1.60 – 1.72, p <.001) for abuse, 1.71 (95% CI = 1.62-1.79, p <.001) for neglect, and 1.74 for household dysfunction (95% CI = 1.66-1.83, p <.001). Functional support was associated with decreases in odds for SAD symptoms for all ACE types, abuse (*OR* = 0.87, 95% CI = 0.83 – 0.90, p <.001), neglect (*OR* = 0.87, 95% CI = 0.83 – 0.91, p <.001), and household dysfunction (*OR* = 0.83, 95% CI = 0.80 – 0.87, p < .001). Structural support was associated with decreases in odds for SAD symptoms for all ACE types, abuse (*OR*

= 0.93, 95% CI = 0.93 – 0.97, p <.001), neglect (*OR* = 0.94, 95% CI = 0.90 – 0.97, p <.001), and household dysfunction (*OR* = 0.93, 95% CI = 0.90 – 0.97, p <.001). Functional support was associated with decreases in odds for SAD symptoms for all ACE types, abuse (*OR* = 0.77, 95% CI = 0.74-0.80, p <.001), neglect (*OR* = 0.77, 95% CI = 0.74-0.80, p <.001), and household dysfunction (*OR* = 0.75, 95% CI = 0.72 – 0.78, p < .001). All ACE types increased odds for SAD symptoms. One unit increases in abuse were associated with a 1.27 increase in odds for SAD symptoms for White participants (95% CI = 1.23 – 1.32, p <.001), one unit increases in neglect were associated with a 1.31 increase in odds for SAD symptoms (95% CI = 1.24 – 1.38, p < .001), and one unit increases in household dysfunction were associated with a 1.10 increase in odds of SAD symptoms (95% CI = 1.06 – 1.15, p < .001). Neither structural nor functional support moderated the associations between any ACE and SAD symptoms. Only parent history in the contexts of neglect and household dysfunction showed significant, small effect sizes.

White Participants - Depression

Models assessing depressive symptoms with abuse correctly classified 72% of cases, and correctly classified 71% of neglect and household dysfunction cases. Nagelkerke R^2 was .23 for abuse, .22 for neglect, and .21 for household dysfunction, explaining 23%, 22%1 and 21% (respectively) of the variance in depressive symptoms for White participants. Again**,** females showed greater odds for depressive symptoms, as did greater levels of education for all ACE types. Increased income and military experience decreased odds of depressive symptoms for all ACE types. Increased age also increased odds of depressive symptoms in the context of abuse and neglect but not household dysfunction. Parent depression history increased the odds for depressive symptoms by 2.52 (95% CI = 2.40-2.65, p <.001) for abuse, 2.65 (95% CI = 2.52-2.79, p <.001) for neglect, and 2.69 for household dysfunction (95% CI = 2.55-2.83, p <.001).

Functional support was associated with decreases in odds of depressive symptoms for all ACE types, abuse (*OR* = 0.76, 95% CI = 0.73 – 0.79, *p* <.001), neglect (*OR* = 0.76, 95% CI = 0.74 – 0.80, *p* <.001), and household dysfunction (*OR* = 0.73, 95% CI = 0.71 – 0.76, *p* < .001). One unit increases in abuse were associated with a 1.41 increase in odds of depressive symptoms (95% CI = 1.36 – 1.46, *p* <.001), one unit increases in neglect were associated with a 1.46 increase in ods of depressive symptoms (95% CI = 1.39 – 1.54, *p* < .001), and one unit increases in household dysfunction were associated with a 1.16 increase in odds of depressive symptoms (95% CI = 1.12 – 1.21, *p* < .001). Neither structural nor functional support moderated the associations between any ACE type and odds of depressive symptoms for White participants.

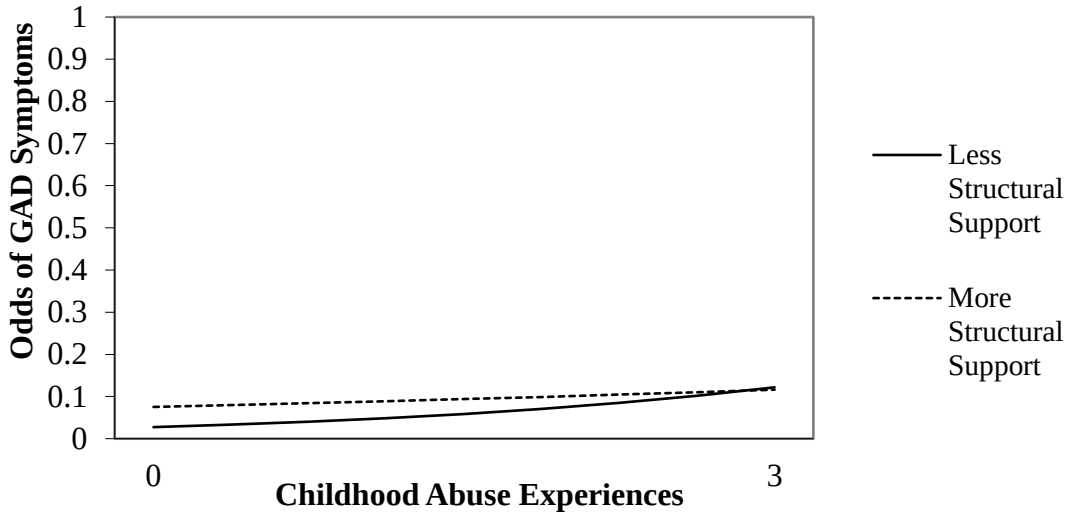
Black Participants - Anxiety

GAD. Models assessing GAD symptoms correctly classified 83% of cases across ACE types. Nagelkerke R^2 was .12 for abuse, .11 for neglect, and .12 for household dysfunction, explaining 12%, 11% and 12% (respectively) of the variance in GAD symptoms for Black participants. Age and being female were associated with increases in odds of GAD symptoms in Black participants for all ACE types. Increased income decreased odds of GAD symptoms for all ACE types. Parent history of anxiety increased the odds for GAD symptoms by 2.34 (95% CI = 2.02-2.49, *p* <.001) for abuse, 2.42 (95% CI = 2.19-2.68, *p* <.001) for neglect, and 2.39 for household dysfunction (95% CI = 2.16-2.65, *p* <.001). Functional support was associated with decreases in odds of GAD symptoms for all ACE types, abuse (*OR* = 0.82, 95% CI = 0.76 - .87, *p* <.001), neglect (*OR* = 0.79, 95% CI = 0.76 – 0.83, *p* <.001), and household dysfunction (*OR* = 0.77, 95% CI = 0.74 – 0.80, *p* < .001). Structural support was associated with increased odds for GAD symptoms in the context of abuse (*OR* = 1.08, 95% CI = 1.0- 1.16, *p* = .026) and neglect (*OR* = 1.08, 95% CI = 1.0 – 1.15, *p* = .044). One unit increases in abuse were associated with a

1.39 increase in odds of GAD symptoms. (95% CI = 1.30 – 1.49, p <.001), one unit increases in neglect were associated with a 1.48 increase in odds of GAD symptoms (95% CI = 1.31 – 1.64, p < .001), and one unit increases in household dysfunction were associated with a 1.26 increase in odds of GAD symptoms (95% CI = 1.17 – 1.36, p < .001). In addition, structural support weakened the sociation between abuse and odds of GAD symptoms (*OR* = 0.91, 95% CI = 0.85 – 0.98, p = .007; Figure 4), although the effect size was negligible.

Figure 4

Moderation of the Associations Between Abuse and Odds of GAD Symptoms via Structural Support - Black Participants



PD. Models assessing PD symptoms in Black participants correctly classified 83% of cases across ACE types. Nagelkerke R^2 was .12 for abuse, .10 for neglect, and .11 for household dysfunction, explaining 12%, 10% and 11% (respectively) of the variance in PD symptoms for Black participants. Being female was associated with increased odds for PD symptoms for all ACE types. One unit increases in income decreased odds of depressive symptoms for all ACE types. In addition, for neglect and household dysfunction, military history and education also increased odds of PD symptoms. Parent anxiety history increased the odds for PD symptoms by

1.89 (95% CI = 1.70-2.10, p <.001) for abuse, 2.09 (95% CI = 1.89 – 2.32, p <.001) for neglect, and 2.03 for household dysfunction (95% CI = 1.83-2.26, p <.001). Functional support was associated with decreases in odds of PD symptoms for all ACE types, abuse (*OR* = 0.84, 95% CI = 0.79– 0.90, p <.001), neglect (*OR* = 0.85, 95% CI = 0.80 - 0.91, p <.001), and household dysfunction (*OR* = 0.81, 95% CI = 0.75 – 0.86, p < .001). One unit increases in abuse were associated with a 1.53 increase in odds of PD symptoms for Black participants (95% CI = 1.43 – 1.63, p <.001). One unit increases in neglect were associated with a 1.63 increase in odds of PD symptoms (95% CI = 1.46 – 1.81, p < .001), and one unit increases in household dysfunction were associated with a 1.42 increase in odds of PD symptoms (95% CI = 1.32 – 1.53 p < .001). Neither structural nor functional support moderated the associations between any ACE and odds of PD symptoms

SAD. For SAD symptoms, 74% of cases were classified correctly for abuse and household dysfunction, and 75% of neglect cases were classified correctly. Nagelkerke R^2 was .10 for abuse, .08 for neglect, and .08 for household dysfunction, explaining 10%, 8% and 8% (respectively) of the variance in SAD symptoms for Black participants. Being female was associated with increased odds for SAD symptoms for all ACE types. Age and education decreased odds of SAD symptoms for all ACE types, and income decreased odds of SAD symptoms in the models of abuse. Parent history of anxiety increased the odds for SAD symptoms by 1.69 (95% CI = 1.53-1.87, p <.001) for abuse, 1.84 (95% CI = 1.67-2.02, p <.001) for neglect, and 1.82 for household dysfunction (95% CI = 1.65-2.00 p <.001). Functional support was associated with decreases in odds of SAD symptoms for all ACE types, abuse (*OR* = 0.82, 95% CI = 0.77 - 0.87 p <.001), neglect (*OR* = 0.81, 95% CI = 0.77 – 0.86, p <.001), and household dysfunction (*OR* = 0.79, 95% CI = 0.75 – 0.84, p < .001). One unit increases in abuse

were associated with a 1.35 increase in odds of SAD symptoms (95% CI = 1.28 – 1.43, p <.001), one unit increases in neglect were associated with a 1.37 increase in odds of SAD symptoms (95% CI = 1.25 – 1.51, p < .001), and one unit increases in household dysfunction were associated with a 1.21 increase in odds of SAD symptoms (95% CI = 1.14 – 1.29, p < .001). Neither structural nor functional support moderated the associations between any ACE and odds of SAD symptoms.

Black Participants - Depression

In assessing ACEs relative to depressive symptoms, 77% of cases were classified correctly in the context of abuse, and 76% were classified correctly in the context of neglect and household dysfunction. Nagelkerke R^2 was .19 for abuse, .17 for neglect, and .17 for household dysfunction, explaining 19%, 17% and 17% (respectively) of the variance in depressive symptoms for Black participants. Being female was associated with increased odds for depressive symptoms for all ACE types. In addition, military history increased odds of depressive symptoms in the context of neglect and household dysfunction. Income decreased odds of depressive symptoms for all ACE types. Parent depression history increased the odds for depressive symptoms by 2.52 (95% CI = 2.30 – 2.77, p <.001) for abuse, 2.74 (95% CI = 2.50-3.01, p <.001) for neglect, and 2.65 for household dysfunction (95% CI = 2.41-2.91, p <.001). Functional support was associated with decreases in odds of depressive symptoms for all ACE types: abuse (OR = 0.78, 95% CI = 0.74 – 0.83, p <.001); neglect (OR = 0.78, 95% CI = 0.73 – 0.83, p <.001), and household dysfunction (OR = 0.75, 95% CI = 0.71 – 0.80, p < .001. One unit increases in abuse were associated with a 1.52 increase in odds for depressive symptoms for Black participants (95% CI = 1.43 – 1.61, p <.001), one unit increases in neglect were associated with a 1.49 increase in odds of depressive symptoms (95% CI = 1.34 – 1.63, p < .001), and one

unit increases in household dysfunction were associated with a 1.34 increase in odds of depressive symptoms (95% CI = 1.25 – 1.43, $p < .001$). Neither structural nor functional support moderated the associations between any ACE and odds of depressive symptoms for Black participants.

Hispanic Participants - Anxiety

GAD. Models assessing GAD symptoms correctly classified 85% of cases across ACE types for Hispanic participants. Nagelkerke R^2 was .15 for abuse, .14 for neglect, and .14 for household dysfunction, explaining 15%, 14% and 14% (respectively) of the variance in GAD symptoms for Hispanic participants. Age, being female, and education were associated with increases in odds of GAD symptoms in Hispanic participants for all ACE types. Income decreased odds of GAD symptoms for all ACE types. Parent anxiety history increased the odds for GAD symptoms by 2.19 (95% CI = 1.98-2.44, $p <.001$) for abuse, 2.34 (95% CI = 2.11-2.59, $p <.001$) for neglect, and 2.33 for household dysfunction (95% CI = 2.11-2.58 $p <.001$). Functional support was associated with decreases in odds of GAD symptoms for all ACE types, abuse ($OR = 0.79$, 95% CI = 0.73-0.84, $p <.001$), neglect (OR = 0.79, 95% CI = 0.73-0.85, $p <.001$), and household dysfunction ($OR = 0.76$, 95% CI = 0.71-0.82, $p < .001$). One unit increases in abuse were associated with a 1.38 increase in odds of GAD symptoms for Hispanic participants (95% CI = 1.29-1.48, $p <.001$). One unit increases in neglect were associated with a 1.48 increase in odds of GAD symptoms (95% CI = 1.32 – 1.67, $p < .001$), and one unit increases in household dysfunction were associated with a 1.30 increase in odds of GAD symptoms (95% CI = 1.20-1.41, $p < .001$). Neither structural nor functional support moderated the associations between any ACE and odds of GAD symptoms for Hispanic participants.

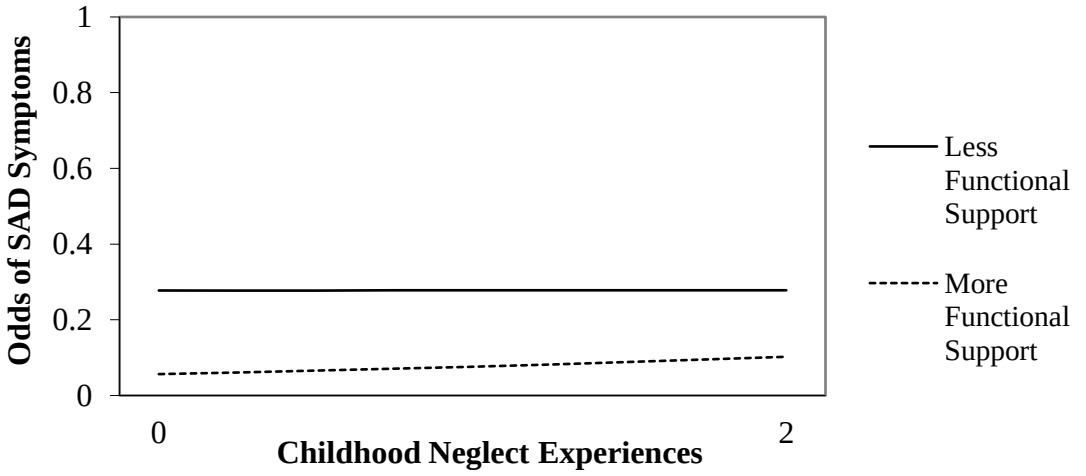
PD. Models assessing PD symptoms correctly classified 83% of cases across ACE types. Nagelkerke R^2 was .17 for abuse, .14 for neglect, and .14 for household dysfunction, explaining 17%, 14% and 14% (respectively) of the variance in PD symptoms for Hispanic participants. Military experience was associated with increased odds for PD symptoms in Hispanic participants, as was education and being female for all ACE types. Parent anxiety history increased the odds for PD symptoms by 1.92 (95% CI = 1.73-2.13, p <.001) for abuse, 2.14 (95% CI = 1.3-2.36, p <.001) for neglect, and 2.13 for household dysfunction (95% CI = 1.92-2.35 p <.001). Functional support was associated with decreased odds for PD symptoms for all ACE types, abuse (*OR* = 0.84, 95% CI = 0.79– 0.91, p <.001), neglect (*OR* = 0.85, 95% CI = 0.79 - 0.91, p <.001), and household dysfunction (*OR* = 0.82, 95% CI = 0.76 – 0.88, p < .001). One unit increases in abuse were associated with a 1.65 increase in odds of PD symptoms for Hispanic participants (95% CI = 1.54-1.76, p <.001), one unit increases in neglect were associated with a 1.70 increase in odds of PD symptoms (95% CI = 1.52-1.90, p < .001), and one unit increases in household dysfunction were associated with a 1.41 increase in odds of PD symptoms (95% CI = 1.31 – 1.52, p < .001). Neither structural nor functional support moderated the associations between any ACEs and odds of PD symptoms. Along with small effect sizes for parent anxiety, the association between neglect and odds of PD symptoms had a small effect of 1.70.

SAD. For SAD symptoms, 77% of cases were classified correctly across models for ACE types. Nagelkerke R^2 was .14 for abuse, .13 for neglect, and .12 for household dysfunction, explaining 14%, 13% and 12% (respectively) of the variance in SAD symptoms for Hispanic participants. For all ACE types, one unit increases in education increased the odds of SAD symptoms as did being female. One unit increases in age and income decreased odds of SAD

symptoms for all ACE types. Parent anxiety increased the odds for SAD symptoms by 1.69 (95% CI = 1.54-1.86, p <.001) for abuse, 1.82 (95% CI = 1.66-2.00, p <.001) for neglect, and 1.85 for household dysfunction (95% CI = 1.69-2.03 p <.001). Both structural and functional support were associated with decreased odds of SAD symptoms for all ACE types. For structural support, odds of SAD symptoms in models of abuse and neglect decreased by 0.91 (95% CI = 0.85-0.98, p =.011), and by 0.91 for household dysfunction (95% CI = 0.85-0.98, p =. 008). One unit increases in abuse were associated with a 1.43 increase in odds of SAD symptoms for Hispanic participants (95% CI = 1.35-1.52, p <.001). One unit increases in neglect were associated with a 1.52 increase in odds of SAD symptoms (95% CI = 1.37-1.70, p < .001), and one unit increases in household dysfunction were associated with a 1.24 increase in odds of SAD symptoms (95% CI = 1.16 -1.33, p < .001). In addition, greater functional support strengthened the association between neglect and odds of SAD symptoms for Hispanic participants (*OR* = 1.09, 95% CI = 1.00-1.18, p = .046; Figure 5). However, the small effect size and the almost parallel nature of the graphed slopes minimizes the meaningfulness of the significant moderation.

Figure 5

Moderation of the Associations Between Neglect and Odds of SAD Symptoms via Functional Support - Hispanic Participants

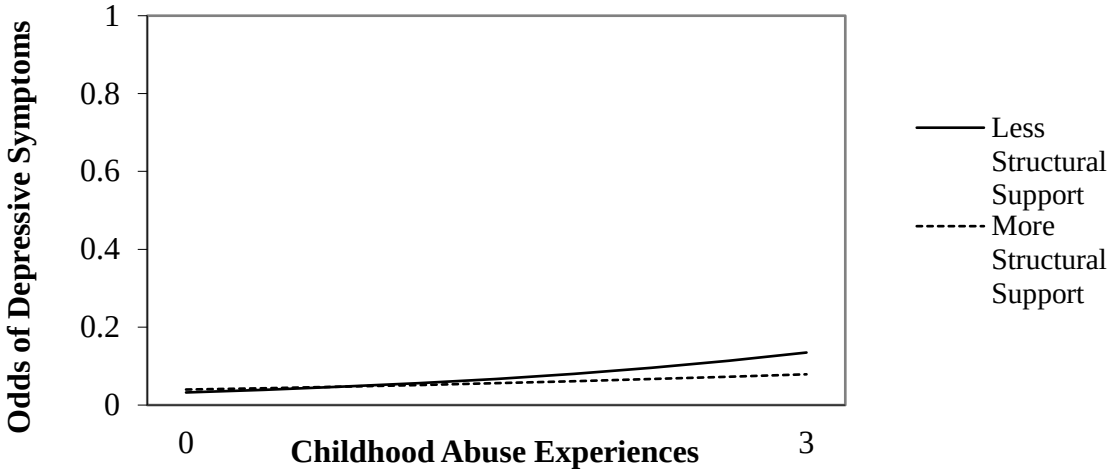


Hispanic Participants - Depression

For ACEs and depressive symptom models, 77% of cases were classified correctly in the context of abuse, and 76% of cases were classified correctly in the context of neglect and household dysfunction. Nagelkerke R^2 was .22 for abuse, .20 for neglect, and .19 for household dysfunction, explaining 22%, 20% and 19% (respectively) of the variance in depressive symptoms for Hispanic participants. One unit increases in education and age increased odds of depressive symptoms for Hispanic participants, as did being female for all ACE types. Income decreased odds of depressive symptoms for all ACE types. Parent depression history increased the odds for depressive symptoms by 2.47 (95% CI = 2.25-2.70, p <.001) for abuse, 2.67 (95% CI = 2.44-2.92, p <.001) for neglect, and 2.60 for household dysfunction (95% CI = 2.37-2.84, p <.001). Functional support was associated with decreased odds for depressive symptoms for all ACE types, abuse (*OR* = 0.80, 95% CI = 0.75-0.85, p <.001), neglect (*OR* = 0.81, 95% CI = 0.76 – 0.86, p <.001), and household dysfunction (*OR* = 0.77, 95% CI = 0.73 – 0.81, p < .001). All One unit increases in abuse were associated with a 1.53 increase in odds of depressive symptoms for Hispanic participants (95% CI = 1.44-1.62, p <.001), one unit increases in neglect were associated with a 1.56 increase in odds of depressive symptoms (95% CI = 1.42 – 1.72, p < .001), and one unit increases in household dysfunction were associated with a 1.30 increase in odds of depressive symptoms (95% CI = 1.21 – 1.39, p < .001). Structural support also minimized the association between abuse and the odds of depressive symptoms (OR = 0.94, 95% CI = 0.88-1.0, p = .044; Figure 6)

Figure 6

Moderation of the Associations Between Abuse and Odds of Depressive Symptoms via Structural Support - Hispanic Participants



Asian/Native Hawaiian/Pacific Islander Participants (ANHPI) - Anxiety

GAD. For GAD symptoms, 88% of cases were classified correctly across models for ACE types. Nagelkerke R^2 was .12 for abuse, .11 for neglect, and .10 for household dysfunction, explaining 12%, 11% and 10% (respectively) of the variance in GAD symptoms for ANHPI participants. Being female was associated with increased odds for GAD symptoms in ANHPI participants for all ACE types. Increased age decreased odds of GAD symptoms for participants with neglect and household dysfunction histories, but not abuse. Parent anxiety history increased the odds for GAD symptoms by 2.01 (95% CI = 1.61-2.50, p <.001) for abuse, 2.14 (95% CI = 1.72-2.66, p <.001) for neglect, 2.21 for household dysfunction (95% CI = 1.78-2.74, p <.001). Functional support was associated with decreases in odds of GAD symptoms for all ACE types, abuse (*OR* = 0.79, 95% CI = 0.67 – 0.92 p =. 004), neglect (*OR* = 0.77, 95% CI = 0.66 – 0.91, p =.002), and household dysfunction (*OR* = 0.73, 95% CI = 0.61 -0.87, p < .001). Contrary to the previously discussed racial groups, abuse was directly associated with increased odds of GAD symptoms (*OR* = 1.39, 95% CI = 1.17-1.64, p <.001), but neglect and household dysfunction

were not. Neither structural nor functional support moderated the associations between any ACE and odds of GAD symptoms for ANHPI participants.

PD. Models assessing PD symptoms correctly classified 89% of cases in the context of abuse, and 88% of cases in the context of neglect and household dysfunction. Nagelkerke R^2 was .08 for abuse, .07 for neglect, and .07 for household dysfunction, explaining 8%, 7% and 7% (respectively) of the variance in PD symptoms for ANHPI participants. Being female was associated with increased odds of PD symptoms in the context of abuse only. Parent anxiety history increases odds of PD symptoms for all ACE types; 1.70 (95% CI = 1.70-1.36, p <.001) for abuse, 1.81 (95% CI = 1.44-2.26, p <.001) for neglect, and 1.86 for household dysfunction (95% CI = 1.49 -2.32, p <.001). Functional support was associated with decreased odds for PD symptoms only in the context of household dysfunction (*OR* = 0.84, 95% CI = 0.70-1.0, p = .048). Abuse was directly associated with a 1.42 increase in odds of PD symptoms for ANHPI participants (95% CI = 1.20 – 1.68, p <.001), and neglect was associated with a 1.45 increase in odds of PD symptoms (95% CI = 1.09-1.92, p = .010). Household dysfunction was not directly associated with odds of PD symptoms, and neither structural nor functional support moderated the associations between any ACEs and odds of PD symptoms.

SAD. Models assessing ACE types on SAD symptoms in ANHPI participants correctly classified 79% of cases in the context of abuse and neglect and 80% of cases for household dysfunction. Nagelkerke R^2 was .12 for abuse, .12 for neglect, and .10 for household dysfunction, explaining 12%, 12% and 10% (respectively) of the variance in SAD symptoms for ANHPI participants. One unit increases in age decreased odds of SAD symptoms for all ACE types. Parent anxiety history increased the odds of SAD symptoms for all ACE types. Odds for SAD symptoms increased by 1.71 (95% CI = 1.40-2.09, p <.001) in models for abuse, 1.70 (95%

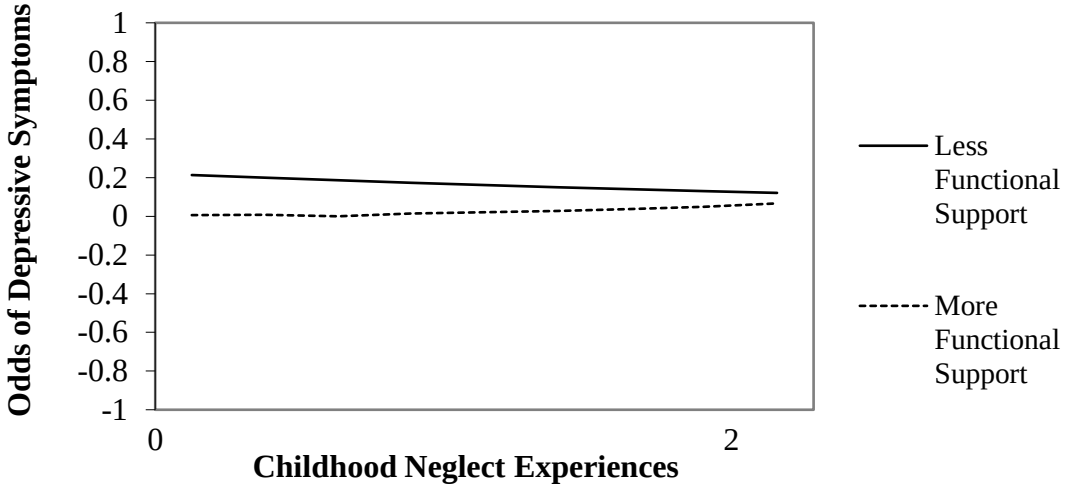
CI = 1.40-2.07, p <.001) for neglect, and 1.80 for household dysfunction (95% CI = 1.48-2.18, p <.001). Both structural and functional support were associated with decreased odds for SAD symptoms for all ACE types. For structural support, odds of SAD symptoms in the context of abuse decreased by 0.83 (95% CI = 0.72-0.96, p = .010), and by 0.84 for neglect (95% CI = 0.73-0.97, p = .017). In addition, structural support decreased the odds of SAD symptoms by 0.73 in the context household dysfunction (95% CI = 0.69- 0.98, p = .025). One unit increases in abuse were associated with a 1.29 increase in odds of SAD symptoms for ANHPI participants (95% CI = 1.12-1.48, p <.001), and one unit increases in neglect were associated with a 1.56 increase in odds of SAD symptoms (95% CI = 1.25-1.96, p < .001). Household dysfunction was not associated with odds of SAD symptoms and structural and functional support did not moderate any of the associations.

Asian/Native Hawaiian/Pacific Islander Participants (ANHPI) - Depression

Models correctly classified 81% of cases in the context of abuse and neglect and 80% of cases for household dysfunction when analyzing depressive symptoms in ANHPI participants. Nagelkerke R^2 was .18 for abuse, .20 for neglect, and .17 for household dysfunction, explaining 18%, 20% and 17% (respectively) of the variance in depressive symptoms for ANHPI participants. Being female increased odds of depressive symptoms for all ACE types. Parent depression history increased the odds of depressive symptoms by 2.89 (95% CI = 2.36-3.53, p <.001) for abuse, 2.99 (95% CI = 2.45-3.65, p <.001) for neglect, and 2.99 for household dysfunction (95% CI = 2.45-3.66, p <.001). Functional support was associated with decreased odds of depressive symptoms for all ACE types, abuse (OR = 0.83, 95% CI = 0.73-0.95, p =.007), neglect (OR = 1.91, 95% CI = 1.51-2.41, p <.001), and household dysfunction (OR = 0.77, 95% CI = 0.73 – 0.81, p < .001). One unit increases in abuse were associated with a 1.53

increase in odds of depressive symptoms for ANHPI participants (95% CI = 1.44-1.62, *p* <.001), one unit increases in neglect were associated with a 1.5 increase in odds of depressive symptoms (95% CI = 1.42 – 1.72, p < .001). One unit increases in household dysfunction were associated with a 1.40 increase in odds of depressive symptoms (95% CI = 1.14-1.70, *p* =.001). Greater functional support heighted the odds of depressive symptoms in the association between neglect and odds of depressive symptoms (*OR* = 1.28, 95% CI = 1.04-1.56, *p* = .018; Figure 7) which contradicted expectation.

Figure 7
Moderation of the Associations Between Neglect and Odds of Depressive Symptoms via Functional Support - ANHPI Participants



American Indian/Alaska Native (AIAN) – Anxiety

GAD. For GAD symptoms, 76% of cases were classified correctly across models for ACE types. Nagelkerke R^2 was .21for abuse, .21 for neglect, and .22 for household dysfunction, explaining 21%, 21% and 22% (respectively) of the variance in GAD symptoms for AIAN participants. Being female was associated with increased odds for GAD symptoms for all ACE types. No covariates decreased the odds of GAD symptoms. Parent anxiety history increased odds of GAD symptoms by 2.27 (95% CI = 1.65-3.13, *p* <.001) for abuse, 2.22 (95% CI = 1.63-

3.03, p <.001) for neglect, and 2.25 for household dysfunction (95% CI = 1.65-3.09, p <.001). Neither structural nor functional support directly decreased odds for GAD symptoms. ACEs were not directly associated with odds of GAD symptoms, and no moderations were present.

PD. For PD symptoms, 71% of cases were classified correctly in the context of abuse, and 70% in the context of neglect and household dysfunction. Nagelkerke R^2 was .18 for abuse, .17 for neglect, and .17 for household dysfunction, explaining 18%, 17% and 17% (respectively) of the variance in PD symptoms for AIAN participants. Being female increased odds for PD symptoms for all ACE types. Parent anxiety history increased odds of PD symptoms by 2.15 (95% CI = 1.59-2.90, p <.001) for abuse, 2.23 (95% CI = 1.67-3.0, p <.001) for neglect, and 2.30 for household dysfunction (95% CI = 1.71-3.09, p <.001). There were no direct associations between structural or functional support and odds of PD symptoms. Abuse was directly associated with a 1.38 increase in odds of PD symptoms for AIAN participants (95% CI = 1.13-1.70, p =.002), and neglect was associated with a 1.60 increase in odds of PD symptoms (95% CI = 1.13 – 2.5, p = .008). Household dysfunction was not directly associated with odds of PD symptoms, and neither structural nor functional support moderated the associations between any ACEs and odds of PD symptoms.

SAD. For SAD symptoms, 69% of cases were classified correctly across models for ACE types and SAD. Nagelkerke R^2 was .16 for abuse, .15 for neglect, and .18 for household dysfunction, explaining 16%, 15% and 18% (respectively) of the variance in SAD symptoms for AIAN participants. Military experience decreased the odds of SAD symptoms for all ACE types. Parent anxiety history increased the odds of SAD symptoms for all ACE types. Odds increased by 1.88 (95% CI = 1.39-2.54, p <.001) for abuse, 1.96 (95% CI = 1.46-2.64, p <.001) for neglect, and 1.98 for household dysfunction (95% CI = 1.46-2.67, p <.001). Neither structural nor

functional support were directly associated with odds of SAD symptoms. One unit increases in abuse were associated with a 1.23 increase in odds of SAD symptoms for AIAN participants (95% CI = 1.01-1.50, *p* =.043), but neglect and household dysfunction were not directly associated with odds of SAD symptoms. There were no moderating effects for support with any ACE type or odds of mental health outcome.

American Indian/Alaska Native (AIAN) - Depression

In the context of abuse, 70% of cases were classified correctly. 71% were classified correctly for neglect and household dysfunction**.** Nagelkerke R^2 was .29 for abuse, neglect, and household dysfunction, explaining 29% of the variance in depressive symptoms across ACE types. For AIAN participants, females had increased odds of depressive symptoms for all ACE types, and age was associated with greater odds of depressive symptoms. Parental depression history increased the odds for depressive symptoms by 2.67 (95% CI = 1.97-3.61, *p* <.001) for abuse, 2.82 (95% CI = 2.09-3.81, *p* <.001) for neglect, and 2.75 for household dysfunction (95% CI = 2.02-3.74, *p* <.001). Functional support was associated with decreases odds of depressive symptoms for all ACE types: abuse (*OR* = 0.79, 95% CI = 0.63-0.98, *p* =.029); neglect (*OR* = 0.73, 95% CI = 0.59-0.92, *p* =.008), and household dysfunction (*OR* = 0.75, 95% CI = 0.61-0.93, *p* =.008). Abuse was directly associated with increased odds of depressive symptoms (*OR* = 1.29, 95% CI = 1.05-1.58, p =.016), but neglect and household dysfunction were not directly associated. There was also no moderating effect for structural or functional support on the associations between any ACE type or mental health outcome.

CHAPTER 5: DISCUSSION

Summary of Findings

The goals of this study were to examine associations between three ACE types (abuse, neglect, household dysfunction) and odds of symptoms associated with two mental health conditions (anxiety and depression), and to examine the main and interactive effects of structural and functional social support (ACE type X support type) on anxiety and depression symptoms. Each of these associations was also considered in the context of racial group. Generally, each ACE type was related to increased odds for anxiety and depressive symptoms, as hypothesized. Unexpectedly, specific ACE types were not uniquely associated with mental health as hypothesized. Effect sizes were generally negligible, not reaching 1.67, the threshold for small effects. Main effects of functional support on mental health outcomes were evident for most mental health outcomes in the expected direction across the sample and by race. Structural support had little association with mental health, with the majority of the main effects associated with odds of SAD. There were few social support moderating effects that showed mixed associations with the odds for symptoms of SAD and depression. Effect sizes for interactions were negligible. Parental history emerged as the most robust (small effect sizes) associate of mental health outcomes. Replication of all analyses in each racial group showed differences primarily in which associations were moderated, (e.g., abuse decreasing odds for GAD in the context of high structural support for Black participants), and in the main effects between the two forms of social support and mental health outcomes (e.g., numerous main effects that were significant in the full sample lost significance for certain race groups). Support systems were significantly associated with odds for mental health outcomes in more models for participants of color than for models with White participants, which aligns with the hypothesis in Aim 3. Main

effects of ACE types are discussed next, followed by a discussion of main and moderated social support effects.

ACE Type and Mental Health

All ACE types were associated with increased odds for all mental health symptoms. Given the similarity in effect sizes for all associations between ACE type and mental health, results did not indicate differences in the impact of type of ACE on mental health symptoms. This is contrary to some other studies such as Kessler et al. (2010) who found that maltreatment ACEs (abuse and neglect) had greater associations with mental disorders. However, Kessler et al (2010) and others have noted that experiences of one type of ACE are associated with increased odds for the occurrence of other ACEs. Clemens and colleagues (2019) reported an increase in the likelihood of experiencing child maltreatment ACEs (abuse and neglect) after experiencing any type of household dysfunction ACE (Clemens et al., 2019). In addition, child maltreatment ACEs at least partially mediated the association between household dysfunction ACEs and later mental health outcomes (Clemens et al., 2019). Therefore, while different types of ACEs may have differing effects on mental health symptoms in adulthood (e.g., Atzl et al., 2019; Narayan et al., 2017; Negriff et al., 2020), the bidirectional associations between ACEs make it difficult to parcel out the influence of each ACE type on outcomes. This complication may help explain the lack of difference in effects by ACE type in the current study.

Structural and Functional Social Support

Main Effects of Social Support

Functional support, operationalized in the current study as perceptions of availability of emotional and concrete resources, was directly associated with decreased odds for anxiety and depressive symptoms across the full sample and for White, Black, and Hispanic participants.

This aligns with existing studies that have found that social support is associated with decreased odds for mental health conditions (e.g., Cohen & Willis, 1985), as well as studies finding that perceived social support can be a stronger buffer against ACEs than actual received support (Evans et al., 2013). Perceived support may increase an individual's ability to cope with stressors by lessening perceived stress, and, in turn, reducing the body's reaction to stress (Cohen & Willis, 1985; McKafferty et al., Wang et al., 2022). As seen in the moderating models in this study, another important angle for understanding these findings may be in the impact of lack of support. While higher levels of support seemed to keep mental health symptoms stable across ACEs, low levels of support were associated with increased mental health symptoms in some models. Lower levels of perceived social support may increase the risk of experiencing trauma symptoms. For example, Von Cheong et al (2017) found that lower levels of support were associated with higher odds of depressive symptoms in older adults who had experienced ACES. Therefore, it may be that higher levels of perceived social support are less about decreasing mental health symptoms, and more about buffering against the risks associated with lower support.

There was not a main effect for the association between functional support and odds of PD symptoms in models of abuse and neglect with ANHPI participants. There was a maintained significant main effect of decreased odds of PD symptoms relative to household dysfunction ACEs. While it is not entirely clear why functional support would only lose its significance for PD symptoms and not relative to other outcomes, partial explanation may be found in the knowledge that individuals from Asian descent tend to be part of a collectivist culture in which individuals in a society are interdependent (Kim et al., 2008; Kitayama & Uchida, 2005). Due to this view, individuals from collectivist cultures may avoid asking for help for personal problems

as they feel they are inflicting a sense of social obligation to help which could be burdensome (Kim et al., 2008; Kitayama & Uchida, 2005). Therefore, the clash between needing support and feeling it is inappropriate to ask for it may result in mental health symptoms, limiting the ability of functional support to decrease the odds of PD symptoms.

Unlike other racial groups where functional support was significantly associated with numerous mental health outcomes, functional support was only associated with decreased odds for depressive symptoms in AIAN. This lack of significance is similar to previous studies such as Oetzel et al., (2007) in which emotional and instrumental support were only associated with decreases in substance abuse, but not decreases in mental health disorders among American Indians. American Indian populations, like Asian populations, also tend to have an interdependent nature, which could result in similar burdensome feelings upon asking for and/or accepting support. In addition, the reported prevalence of GAD, PD, and depression are lower in Indigenous populations (Kisely et al., 2016), and Asian Americans are less likely than White, Hispanic, and African Americans to receive SAD, GAD, PD diagnoses (Asnaani et al., 2010). Therefore, these differences may be in part due to beliefs about asking for and accepting support, as well as lower rates of symptomology and diagnoses in ANHPI and AIAN individuals. As caveat, however, it is unclear as to whether lower reported prevalence rates cited above reflect mental health status or illustrate reporting or measurement issues.

Structural support did not have any main effects in the full sample but was directly associated with decreased odds of SAD symptoms in White, Hispanic, and AIAN participants across ACE types, increases in odds of GAD symptoms for Black and AIAN participants in the abuse model, and decreases in depressive symptoms for Hispanic participants in the abuse model. The increase in odds for mental health conditions was unexpected. However, a few

similarities emerged in these cases. First, for the full sample and by race (specifically for Black and AIAN adults), direct associations between structural support and increased odds for GAD symptoms only occurred when considering abuse and neglect, and not household dysfunction (see Appendix A, Table 2B, the association between structural support and odds of GAD for both Black and AIAN participants). Structural support is characterized by the number of individuals the participant talks to in a two-week period. It does not consider the content, quality, or direction (i.e., is the participant contacting individuals in these social groups or are members of these social groups contacting the participant) of these interactions. Quality of support systems tend to have a greater influence on buffering against negative outcomes than the quantity of support systems (Kim et al., 2022). Therefore, increased numbers of individuals in a participant's structural support group may not necessarily reflect high quality support. In addition, differences in the makeup of structural support groups by race also likely influences the differences seen by race for structural support in this study. For example, while White and Black individuals may report similar numbers of individuals in their support networks, Black individuals often have higher numbers of kin/relatives in their social networks, as well as higher rates of church attendance (Plant et al., 2004), which may influence the type and quality of support received. Finally, due to additional stressors individuals of color experience, such as discrimination and mistreatment leading to fear of authority and formal mental health services (e.g., Bates & Harris, 2004; Whaley, 2001), individuals from groups that have been marginalized may be more inclined to lean on those close to them support rather than seek out formal support services (Plant et al., 2004).

Support as Moderating ACE Effects

As noted for moderating effects, effect sizes were negligible. Readers should consider the discussion with these caveats in mind. Decreases in odds in the context of high functional support occurred in the association between neglect and odds of depressive symptoms for the full sample. Decreases in odds occurred in the context of high structural support in the association between abuse and GAD for Black participants, and in the association between abuse and depressive symptoms for Hispanic participants. These findings align with Aim 2 and our hypothesis that the presence of high social support would decrease the odds of mental health symptoms. However, the minimal effect sizes are surprising given the vast history of research that supports the importance of social support systems for victims of ACEs (e.g., Gottlieb & Bergen., 2009; Klika & Herrenkohl., 2013; Malhi et al., 2019; Pepin & Banyard., 2006; Southwick et al., 2016). This lack of effect could potentially be due to the assessment of support in adulthood rather than childhood and will be discussed in more detail later in the discussion.

In the context of structural support, less support increased the effects of HD on odds of SAD symptoms. Increases in odds in the context of less support also occurred in the association between HD and odds of depressive symptoms in the context of less functional support. The increases in odds for low levels of support align with existing research (e.g., McCutchen et al., 2022; Von Cheong et al., 2017), however the focus in some associations being within the context of less support with a lack of moderation in the context of high support is surprising. These significant increases in odds in the context of less support only occurred for HD ACEs and within the full sample. Because HD ACEs involve actions of household members (generally family), who are usually a child's main source of support (Shonkoff, 2016), the absence of these members due to HD ACEs such as parental separation, incarceration, or rehabilitation programs

(substance abuse, mental health) may amplify the child's perceptions of a lack of support within their primary support source. Due to the limited research assessing ACEs by type, further research is needed to understand how household dysfunction in particular may amplify perceptions of less support.

Increases in odds occurred in the context of high functional support for models of neglect associated with odds of depressive symptoms in the full sample, neglect associated with odds of SAD symptoms in the Hispanic sample, and neglect associated with odds of depressive symptoms in the ANHPI sample. One possible explanation for increases in odds in the context of high functional support is that neglect is characterized by a lack of tangible and emotional resources (i.e., food, shelter, clothing, education, nurturing and supervision; Dubowitz & Bennett, 2007; Helfer, 1990). Therefore, adults who experienced neglect as a child may feel unwilling to utilize functional support resources in adulthood due to distrust that developed from their neglect experiences (Gibson & Hartshorne, 1996; Sperry & Widom, 2013). In addition, symptoms associated with mental health disorders, such as rumination (dwelling on negative emotions and the source of those emotions [Teismann et al., 2014]), can erode the buffering ability of social support (Nolen-Hoeksema., 2004). Rumination itself is a strong predictor of depressive symptoms (e.g., Michl et al., 2013; Verstraeten et al., 2011; Young & Dietrich, 2015) and if individuals in a participant's life are continuing to offer support that the participant doesn't feel safe accepting, this could potentially heighten their odds of SAD symptoms. Given the marginal effect sizes in this study, it is also possible that the support systems to which participants had access were simply not effective in counteracting the negative symptoms developed from childhood adversity.

Understanding the Role of Support

A potential explanation for the lack of significance of both main and interactive effects of structural and functional support may be the retrospective reporting of ACEs as adults. In short, there may be a disconnect between ACEs experienced in childhood and social support in adulthood. Childhood adversities were reported retrospectively but social support reflected current support resources. This presents two problems. First, social support available at the time of the adverse experience(s) are unknown, and the effects of current support may be less relevant to past experiences. Second, it is also possible that participants were experiencing symptoms of anxiety and depression prior to establishment of their current support systems. The risk of developing a psychiatric condition decreases as time since the adversity elapses (Greif Green et al., 2010; Kessler et al., 1997; Kessler et al., 2010). In addition, studies of cumulative ACEs (rather than by type) have established the buffering ability of supportive individuals during childhood in the associations between ACEs and mental health conditions (e.g., Bellis et al., 2017; Brown & Shillington, 2017). From this knowledge, it can be inferred that the delayed reporting of support systems in adulthood is likely cause for the lack of impact in this study. Existing literature also shows that anxiety and depression are associated with decreased structural and functional support (e.g., Stewart et al., 2022). Therefore, if these mental health conditions developed prior to the establishment of their current support systems, the ability of current supports systems to moderate the association between childhood ACEs and mental health conditions may be impaired.

There were also differences in the impact of support by type. Functional support (e.g., *someone would come pick me up if I was stranded, I have someone I can talk to about my fears*) was significantly associated with anxiety and depression symptoms more frequently than

structural support (*I talk to 12 people from work socially every two weeks, I talk to my in laws every 2 weeks*), both in direct and moderating associations. This finding is consistent with the literature (e.g., Kim et al., 2023; Stewart et al., 2022) suggesting that the quality of supports (i.e., perceiving you have people in your life you can lean on) rather than the quantity of supports (i.e., the number of people an individual talks to every 2 weeks).

Parent History of Anxiety and Depression

Across all models and regardless of race, parent history of anxiety and/or depression was most consistently associated with increased odds of anxiety and depressive symptoms in participants and was the only contributor on odds of anxiety and depressive symptoms to reach small effect sizes (aside from the association of neglect to depression for Hispanic participants). Parental history of anxiety and depression increased the risk of anxiety and depressive symptoms in their children compared to parents without histories of depression or anxiety (Weissman et al., 1996). Children observe the reactions of their parents to different stimuli and accept anxious reactions as typical. Intergenerational transmission of anxiety and depressive symptoms can also be transmitted via hearing parental explanations of events that exacerbate the negativity of the experience and highlight anxiety related information processing (Eley et al., 2015).

Parents may also transmit their own symptoms to their children through abusive or neglectful parenting practices (Eley et al., 2015). Parent anxiety and depression are both associated with adverse parenting practices such as abuse and neglect (Howe., 2010; Schaeffer et al., 2005) These findings highlight the importance of intervention to address adverse experiences and treat anxiety and depression before the symptoms transfer to the next generation. Finally, in addition to environmental transmission of symptomatology, the association between parental mental health history and participants' mental health may reflect genetic predispositions.

Children whose biological parents have histories of anxiety and depression are at risk for intergenerational transmission of anxiety and depression through genetic pathways (e.g., Nagel et al., 2018), which has been further supported by adoption studies of children with biological parents who had mental health disorders (e.g., Natsuaki et al., 2013).

Another interesting finding emerged when examining parent mental health history. As mentioned previously, participants who did not know if their parents had a history of anxiety or depression had significantly higher ACEs than those who knew their parents' mental health histories. It is possible that parents in this group had undiagnosed and untreated anxiety and depression. In addition to raising the odds of the mental health concerns in their children, undiagnosed and untreated parent mental health conditions are associated with decreased success of therapeutic practices and poorer outcomes when their children do receive treatment (Beauchaine et al., 2005; Pilowsky et al., 2008; Rishel et al., 2006). This is likely because parents are not processing their own emotions and therefore do not modify the parenting practices that contributed to their children's need for services (Chronis et al., 2004). When parents resolve their own mental health conditions, children's mental health symptoms improve as well (Brent et al., 1998; Coiro et al., 2012; Foster et al., 2009; Gordon et al., 2012; Pilowsky et al., 2008).

Associations Between Demographic Characteristics and Mental Health

Participant age increased the odds of symptoms across ACE types for both GAD and depressive symptoms which contradicts existing research supporting that age decreases prevalence of anxiety and depressive symptoms (e.g., Bandelow & Michaelis., 2015; Kessler et al., 2010). However, when implementing a more stringent p value of $p < .001$, age was no longer significant in models including abuse ($p = .009$) and neglect ($p = .023$) relative to depressive

symptoms. In addition, GAD has the latest average onset (compared to other mental conditions) at 31 years (Kessler et al., 2005), and depression has a later onset than all anxiety disorders (Kessler et al., 2005). Therefore, this finding is likely due to the increased reporting of depression and GAD in older adults compared to younger adults in the current sample. Age decreased odds across race types and ACE types for PD and SAD. Specific conditions such as PD and SAD have the earliest onset (Kessler et al., 2005) and are more common than GAD in young adults. Young adults also have higher rates of specific conditions compared to older adults (Kessler et al., 2012).

Relative to males, females had increased odds of both anxiety and depressive symptoms across ACE types in the full sample. This finding repeated across the majority of race models (see Appendix A, Table 2B for details). Females have higher prevalence of ACEs compared to men (e.g., Gavazzi et al., 2006). In addition, females are more likely than males to seek formal support through therapy and have their symptoms for mental health conditions analyzed due to male stigma around seeking health services (Afifi, 2007; Eisenberg et al., 2009; Rhodes & Goering., 1994). In countries with less traditionality to female gender roles, the gap in prevalence of mental health disorders between males and females narrows (Seedat et al., 2009). Females also report higher levels of internalizing (Altemus et al. 2014). All of the aforementioned conditions likely contribute to the differences by gender that were prominent in this study.

Income decreased the odds of all mental health symptoms for all ACE types in the full sample except considerations of associations between abuse and odds of GAD symptoms. In this case, income increased the odds of GAD symptoms. While it is unclear why income would be differentially related to odds of GAD symptoms in this case, it is possible that income decreased the odds of mental health symptoms generally because greater financial resources might allow

adults to seek formal support services. As will be discussed in more detail in the limitations section, attendance in formal therapeutic services was not analyzed in this study, meaning some of these findings could be associated with that excluded component. Decreased odds relative to income were replicated for White participants and Black participants. Hispanic participants followed suit for all ACE type with odds of GAD, SAD, and depression symptoms, but not odds of PD symptoms. Income had no associations with mental health for ANHPI and AINA participants. It is possible that stigmas against seeking mental health services were associated with the lack of importance of income for ANHPI and AINA participants (Eisenberg et al., 2009). Distrust and cultural beliefs also likely contribute as mentioned previously. While most studies of racial mistrust only include Black minority participants, minimal research has begun to include other minority groups. For example, in an all-Filipino sample, cultural distrust lowered likelihood of seeking psychological help, and predicted variance in these help seeking attitudes that were not accounted for by income, generation, general stigmas against help seeking, and even Asian cultural values (David., 2010). If an individual does not wish to seek formal services due to distrust or stigmas, then income becomes irrelevant to their help seeking behavior.

Associations between military history and mental health symptoms varied drastically among racial groups. In the full sample, military history increased the odds for PD symptoms after experiencing neglect or household dysfunction but had no other impact across the models. PD symptoms have high similarity and comorbidity to PTSD symptoms (Engelhard et al., 2010; Gros et al., 2011), which are more common amongst military members compared to the general population (Gaylord et al.,2009; U.S. Department of Veterans Affairs, 2023). Military history increased odds of PD symptoms and depressive symptoms in Black participants and odds of PD symptoms in Hispanic participants. Racial minorities are at a higher risk of developing PTSD

symptoms compared to White individuals, and this association has even greater predictive power in military samples (Brewin et al., 2000; Coleman., 2015), This combination of race and military history may explain some of the differences found here, but this area is significantly understudied and in need of further understanding. Military experience decreased odds for depressive symptoms in White participants and odds for SAD symptoms in AIAN participants. Military experience is associated with resilience to depression (Orak et al., 2022) which is hypothesized to be due to the financial, educational, psychological, and social advantages military membership provides (Orak et al., 2022). Because of the social resources available to military members and veterans focused on mental health, this could explain why there were decreased odds for depressive symptoms in White military members and odds of SAD symptoms in AIAN military members. It also supports the inconsistent increases in mental health symptoms in other groups.

Finally, greater levels of education increased the odds for mental health symptoms across ACEs and mental health symptoms for the full sample (aside from abuse to odds of SAD symptoms). This is at odds with existing work finding that education is associated with decreased odds for mental health conditions (e.g., Bjelland et al., 2008; Chevalier & Feinstein, 2006). However, other studies find that higher education includes greater financial strain which is associated with increased anxiety and depression in college students (Andrew & Wilding, 2010) and the age at which the average individual is in higher education aligns with the peak time in which mental health problems develop (Kessler et al., 2007; Slade et al., 2007). College students are also significantly more likely to meet the criteria for a DSM-IV disorder compared to non-students (Blanco et al., 2008). Much variation was also seen for education across races. Education stayed a significant factor for Hispanic participants across ACE types increasing odds

for anxiety and depressive symptoms. However, education was associated with increased odds for depressive symptoms and decreased odds for SAD symptoms in White participants, increased odds for PD symptoms and decreased odds for SAD symptoms in Black participants and had no effect on ANHPI or AIAN participants. These mixed findings are difficult to untangle given the limited research in this area. However, depression and anxiety are the most common outcomes of discrimination distress among racial and ethnic minorities (Lee & Ahn, 2011; 2012; Pieterse et al., 2012). In addition, Black college students are more likely to perceive they are being discriminated against compared to Asian American and Latino/a American students (Cokley et al., 2017). Imposter syndrome is also more common among ethnic minorities (Doughty & Matin-Parchment, 2023) and associated with mental health conditions (Cokley et al., 2017). All these factors likely play a role in the racial differences seen here.

Strengths and Limitations

The large sample size of this national data set strengthens the generalizability of the findings to the general population. The inclusion of analyses by race takes a modern, inclusive approach to understanding the impact of ACEs on mental health, and how the protective ability of support systems may vary. There are several limitations to this study. First, effect sizes were very small, impacting the interpretation of/meaningfulness of moderating associations. In addition, as with most ACE studies, the data collected is subject to recall bias as participants were reporting as adults on experiences that occurred to them as children. Recall bias impacts the accuracy of reporting prior experiences because of physical and/or psychological health status at the time of reporting (Widom et al., 2004). For example, unhealthy individuals may interpret their early experiences in a more negative way than healthy individuals. “Effort after meaning,” is a process suggested to contribute to recall bias where unhealthy individuals exert more effort

to explain and assign more meaning to past events (Widom et al., 2004). The likelihood of recall bias increases with the age of participants (Della et al., 1990; Williams, 1995). The original data collection by the NIAAA also included significant imputation of missing data, including imputing a participant as female if their sex was missing. Additionally, the current study only asked about participant sex, not participant gender, which could also play an important role in understanding the nuances of the impact of ACEs. This study also did not consider if participants had received any therapeutic services for mental health conditions, which could result in decreases in odds for mental health conditions, as well as decreased odds being associated with social support rather than health services The ACEs assessed only included the seminal 10 ACEs as established by Felitti and colleagues (Felitti et al., 1998). These original ACEs were developed from a limited sample of insured, primarily white, educated participants. With the current understanding of racial health disparities, there are likely many other ACEs not measured in the current study that may impact mental health, particularly in more diverse and minority populations (Cronholm et al., 2015). This study also did not look at differences in the occurrence of each type of ACE (i.e., did a participant rarely experience physical abuse compared to experiencing it often). Finally, the support variables used did not encompass all aspects of support that could buffer the effects of ACEs on mental health outcomes. In particular, the lack of specificity on what interactions occurring between participants and individuals they talk to on a two-week basis consist of leaves much up for interpretation. It is likely these interactions have both positive and negative components which could impact how helpful structural support can be for victims of ACEs.

Future Directions

Findings from the current study suggest several lines of further inquiry. First, future work in this area should continue to explore the differential impact of types of ACEs on both child and adult outcomes. Household dysfunction ACEs consist of experiences that do not occur directly to the child, but to those in their immediate family (i.e., witnessing violence, parent separation, death of a household member, incarceration of a household member, drug or alcohol abuse by a household member). Abuse and neglect involve victimization aimed directly at a child and are often perpetrated by a trusted caregiver. These experiences diminish safety expectations held by children that are expected in the in the parent–child relationship (Cicchetti & Toth, 1995). Although household dysfunction experiences can severely disrupt the household environment, abuse and neglect tend to involve significant betrayal of the caregiving relationship in which the child must often still rely on their perpetrator for care (Freyd, 1996). Because of these differences and with existing work supporting the differential influence of types of ACEs (abuse, neglect, household dysfunction) on mental health outcomes (e.g., Breuer et al., 2020; Merrick et al., 2014; Westermair et al., 2018), it is unclear why this study did not find significant differences by ACE type. Types of measures used, and participant demographics could be one potential explanation for these differences. For example, Breuer et al (2020) and Westermair et al (2018)'s studies were both conducted in Germany using the German versions of ACEs and mental health diagnoses measures. Simple differences in the German population compared to the American population as well as the German interpretation could result in differences in data collected. Further work is needed to gain a stronger perspective of how and why different types of ACEs may have differing impacts on development, such as development of anxiety and depressive symptoms over time. As mentioned previously, work also needs to explore how we

can understand these differences while accounting for the influence of experiencing one type of ACE on the likelihood of experiencing another type.

Because support in childhood does buffer the impact of ACEs on many developmental outcomes including anxiety and depressive symptoms (e.g., Choi, 2019; Narayan et al., 2018; Werner, 2001), the current study suggests that support during childhood, closer to the time the ACE occurred, may be more important than support available in adulthood. Future work is needed to understand differences in the impact of support over time and how support systems present in childhood may be more important for buffering against the impact of ACEs. Further work is also needed in defining what beneficial social supports for ACEs are composed of. Specifically, literature suggests that emotional support (e.g., self-esteem and appraisal support) is most important for buffering against mental health conditions after adversity (Hyman et al., 2003; Muller et al., 2000). However, differences in the impact of emotional versus tangible supports have not been explored in the context of different ACE types. Therefore, future work should explore if the importance of emotional support holds true when looking at differing ACE types, and if it so, focus research towards emotional support and how it can be best integrated into the lives of ACE survivors.

Second, there are several avenues to explore relative to how ACEs and support may be related. For example, abused children are the most likely to develop dissociative behavior (i.e., "disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior" (DSM-5; American Psychiatric Association, 2013 [Vonderlin et al., 2018]), which may impact the extent to which they are able to access and use supports.

Although beyond the scope of this study, the unexpected findings concerning the lack of importance of structural support in some models, as well as increased odds for mental health symptoms on other models, suggests that constructs such as attachment may be important to consider in future studies. Attachment theory may be helpful in understanding why having a large structural support system is associated with strengthened associations between abuse, neglect, and odds of GAD symptoms for some participants. For example, victims of maltreatment are significantly more likely to develop a disorganized attachment style compared to non-maltreated individuals (Baer & Martinez, 2006). Disorganized attachment occurs in the absence of parenting behaviors that guide an organized understanding of dealing with stress (Baer & Martinez, 2006). When a child is maltreated by their caregivers, disorganized attachment occurs because children look to their primary caregivers as their main, and possibly only source of comfort, and are met with unpredictable and often frightening or abusive behavior (van Ijzendoorn et al., 1999). Individuals who have disorganized attachment often lack coherent mental representations of themselves and others (Paetzold et al., 2015) and are likely to have strained adult relationships (Davis et al., 2001; Ducharme et al., 1997; Hankin, 2005) due to fear of close relationships (Paetzold et., 2015). These individuals may seek intimacy with others during times of stress while also experiencing conflicting apprehension and fear of trusting others (Paetzold et., 2015). Therefore, having a large structural support network may invoke anxiety.

Moreover, it is also important to consider differences in cultural norms for attachment. The assessment of attachment, attachment behaviors, and attachment figures are embedded in cultural contexts. While much of the attachment literature tends to compare patterns of attachment across cultural groups (e.g., Charalampous et al., 2019; Feeney & Collins, 2019;

Jimenez-Rodriguez et al.,2022), scholars have also described the ways in which the "who" and "what" of attachment may be qualitatively different around the world (e.g., Keller., 2012). How attachment is conceptualized in different cultures likely has an influence on how attachment impacts the views and acceptance of social support.

Conclusions

Study results add to the body of ACEs research by providing specificity regarding associations between specific types of ACEs and anxiety and depressive symptoms. It also highlights important areas where further research is needed, such as the timeline in which the buffering ability of support systems is greatest, and what components of social support have the greatest impact. The significant role of parent anxiety and depression in this study also supports the importance for both parent and child to be involved in interventions aimed at recovery from ACEs and improving mental health. In the present study, support systems established in adulthood played a minimal role in buffering associations between childhood adversity and adult mental health. Models including neglect had the greatest association with mental health symptoms, followed by abuse, and a significant decrease in effect sizes between abuse and household dysfunction. For adults who experienced childhood abuse and neglect, some forms of social support such as having large social systems may increase the effects of childhood adversity on adult mental health outcomes. This raises an important concern to understand how different expressions of support can help or hinder recovery after childhood adversity. By increasing efforts to understand the impact of each type of ACE on adult mental health, as well as define aspects of social support that should be prioritized, practitioners may begin detailing interventions to meet the needs of each ACE survivor. Through these adjustments, we can

improve outcomes such as adult mental health, as well as limit the intergenerational transmission of these experiences to future generations.

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APPENDIX A

ADDITIONAL TABLES

Note: *The following table includes the output for each model by mental health outcome for each variable. For example, the first group labeled age under the row with labels presents the data for the association between age and GAD for the full sample by each ACE type, so the first line under age, labeled AB, would be the output for the association between age and GAD in a model considering abuse history.*

Table 1A
Hierarchical Regression Output – Full Sample

Full Sample – GAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.01	<.001	36.50	.00	1.01	1.00-1.01
Neglect	0.01	<.001	29.07	.00	1.01	1.40-1.59
House. Dys.	0.01	<.001	47.12	.00	1.01	1.00-1.01
Sex[1]						
Abuse	0.38	<.001	134.31	.03	1.46	1.37-1.55
Neglect	0.40	<.001	155.40	.03	1.50	1.40-1.59
House. Dys.	0.37	<.001	137.34	.03	1.45	1.36-1.55
Income						
Abuse	-0.08	<.001	66.28	.01	0.92	0.91-0.94
Neglect	-0.08	<.001	67.24	.01	0.92	0.91-0.94
House. Dys.	-0.08	<.001	58.68	.01	0.93	0.91-0.95
Mil. Exp.						
Abuse	0.01	.921	0.01	.06	1.01	0.90-1.13
Neglect	0.05	.401	0.71	.06	1.05	0.94-1.18
House. Dys.	0.03	.607	58.68	.06	1.03	0.92-1.15
Education						
Abuse	0.03	<.001	19.12	.01	1.03	1.02-1.04
Neglect	0.04	<.001	33.65	.01	1.04	1.03-1.05
House. Dys.	0.04	<.001	33.34	.01	1.04	1.03-1.05
Par MH[2]						
Abuse	0.75	<.001	1229.93	.02	2.11	2.03-2.20
Neglect	0.80	<.001	1452.31	.02	2.22	2.13-2.32
House. Dys.	0.80	<.001	1454.07	.02	2.23	2.14-2.33

Table 1A (cont'd)

ACE Type						
Abuse	0.30	<.001	410.33	.02	1.40	1.36-1.44
Neglect	0.35	<.001	218.95	.02	1.42	1.36-1.49
House. Dys.	0.20	<.001	150.97	.02	1.22	1.18-1.26
Struc. Sup.						
Abuse	0.01	.708	0.14	.02	1.01	0.98-1.04
Neglect	0.00	.844	0.04	.02	1.00	0.97-1.04
House. Dys.	0.00	.872	0.03	.02	1.00	0.97-1.04
Func. Sup.						
Abuse	-0.21	<.001	182.48	.02	0.81	0.78-0.83
Neglect	-0.22	<.001	183.33	.01	0.80	0.78-0.83
House. Dys.	-0.25	<.001	269.74	.02	0.78	0.76-0.80
SS Int.						
Abuse	-0.03	.089	2.89	.02	0.97	0.95-1.00
Neglect	0.01	.659	0.20	.03	1.01	0.96-1.06
House. Dys.	-0.02	.288	1.13	.02	0.98	0.95-1.02
FS Int.						
Abuse	-0.01	.511	0.43	.01	1.0	0.96-1.02
Neglect	0.03	.659	0.20	.03	1.01	0.96-1.06
House. Dys.	-0.00	.906	0.01	.02	1.0	0.97-1.03

Full Sample – PD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.00	<.001	22.49	.00	1.00	0.99-1.00
Neglect	-0.00	<.001	28.27	.00	1.00	0.99-1.00
House. Dys.	-0.00	<.001	10.36	.00	1.00	0.99-1.00
Sex[1]						
Abuse	0.60	<.001	391.67	.03	1.83	1.72-1.94
Neglect	0.63	<.001	431.67	.03	1.88	1.77-2.00
House. Dys.	0.59	<.001	384.23	.03	1.81	1.71-1.92
Income						
Abuse	-0.05	<.001	391.67	.01	0.96	0.94-0.97
Neglect	-0.04	<.001	23.66	.01	0.96	0.94-0.97
House. Dys.	-0.04	<.001	17.46	.01	0.96	0.95-0.98
Mil. Exp.						
Abuse	0.10	.076	3.14	.06	1.10	0.99-1.23
Neglect	0.15	.006	7.48	.06	1.16	1.04-1.30
House. Dys.	0.13	.024	5.11	.06	1.13	1.02-1.26

Table 1A (cont'd)

Education						
Abuse	0.41	<.001	39.67	.01	1.04	1.03-1.06
Neglect	0.05	<.001	64.22	.01	1.05	1.04-1.07
House. Dys.	0.05	<.001	65.56	.01	1.05	1.04-1.07
Par MH[2]						
Abuse	0.64	<.001	965.44	.02	1.89	1.82-1.97
Neglect	0.70	<.001	1217.68	.02	2.02	1.94-2.10
House. Dys.	0.70	<.001	1210.86	.02	2.02	1.94-2.10
ACE Type						
Abuse	0.38	<.001	746.51	.01	1.46	1.42-1.50
Neglect	0.43	<.001	371.28	.02	1.54	1.47-1.60
House. Dys.	0.26	<.001	284.43	.02	1.29	1.26-1.33
Struc. Sup.						
Abuse	0.02	<.001	0.993	.02	1.02	0.99-1.05
Neglect	0.01	.329	0.951	.02	1.02	0.99-1.04
House. Dys.	0.02	.374	0.789	.02	1.01	0.98-1.04
Func. Sup.						
Abuse	-0.13	<.001	696.37	.02	.088	0.86-0.91
Neglect	-0.12	<.001	62.80	.02	0.89	0.86-0.91
House. Dys.	-0.17	<.001	128.94	.02	0.85	0.82-0.87
SS Int.						
Abuse	-0.02	.191	1.71	.01	0.98	0.95-1.01
Neglect	-0.04	.065	3.40	.02	0.96	0.91-1.00
House. Dys.	-0.01	.437	0.603	.02	0.99	0.96-1.02
FS Int.						
Abuse	0.01	.623	0.24	.01	1.01	0.98-1.03
Neglect	0.04	.067	3.36	.02	1.04	1.00-1.08
House. Dys.	-0.02	.309	1.04	.02	0.99	0.96-1.01

Full Sample – SAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	<.001	95.33	.00	0.99	0.98-0.99
Neglect	-0.01	<.001	104.51	.00	0.99	0.98-0.99
House. Dys.	-0.01	<.001	76.99	.00	0.99	0.99-1.00
Sex[1]						
Abuse	0.29	<.001	116.34	.03	1.34	1.27-1.41
Neglect	0.31	<.001	134.57	.03	1.37	1.30-1.44
House. Dys.	0.29	<.001	115.31	.03	1.34	1.27-1.41
Income						
Abuse	-0.04	<.001	24.81	.01	0.96	0.94-0.98
Neglect	-0.04	<.001	24.90	.01	0.92	0.94-0.98
House. Dys.	-0.04	<.001	20.37	.01	0.96	0.95-0.98

Table 1A (cont'd)

Mil. Exp.						
Abuse	0.30	.549	0.36	.05	1.03	0.93-1.14
Neglect	0.70	.163	1.95	.05	1.07	0.97-1.18
House. Dys.	0.06	.250	1.32	.05	1.06	0.96-1.17
Education						
Abuse	0.01	.196	1.67	.01	1.01	1.00-1.02
Neglect	0.02	.006	7.58	.01	1.02	1.01-1.03
House. Dys.	0.02	.007	7.18	.01	1.02	1.00-1.03
Par MH[2]						
Abuse	0.53	<.001	733.58	.02	1.71	1.64-1.77
Neglect	0.59	<.001	919.30	.02	1.80	1.73-1.87
House. Dys.	0.60	<.001	930.60	.02	1.81	1.74-1.88
ACE Type						
Abuse	0.28	<.001	466.13	.01	1.32	1.29-1.36
Neglect	0.30	<.001	211.35	.02	1.35	1.30-1.41
House. Dys.	0.16	<.001	123.05	.01	1.17	1.14-1.21
Struc. Sup.						
Abuse	-0.07	**<.**001	25.05	.01	0.93	0.91-0.96
Neglect	-0.07	<.001	25.02	.01	0.93	0.91-0.96
House. Dys.	-0.07	<.001	26.49	.01	0.93	0.91-0.96
Func. Sup.						
Abuse	-0.23	<.001	273.06	.01	0.80	0.79-0.82
Neglect	-0.23	<.001	265.97	.01	0.80	0.78-0.82
House. Dys.	-0.26	<.001	366.50	.01	0.78	0.76-0.80
SS Int.						
Abuse	-0.02	.196	1.68	.01	0.98	0.96-1.01
Neglect	0.00	.963	0.00	.02	1.00	0.96-1.05
House. Dys.	-0.04	.014	6.06	.08	0.96	0.93-0.99
FS Int.						
Abuse	-0.01	.433	0.62	.01	0.99	0.97-1.02
Neglect	0.03	.963	2.48	.02	1.03	0.99-1.07
House. Dys.	-0.02	.203	1.62	.01	0.98	0.96-1.01

Full Sample – Depression as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.009	6.77	.00	1.00	1.00-1.00
Neglect	0.00	.023	5.50	.00	1.00	1.00-1.00
House. Dys.	0.00	<.001	16.31	.00	1.00	1.00-1.01
Sex (F)[1]						
Abuse	0.56	<.001	411.63	.03	1.76	1.66-1.85
Neglect	0.58	<.001	443.69	.03	1.79	1.70-1.89
House. Dys.	0.55	<.001	400.52	.03	1.73	1.64-1.83

Table 1A (cont'd)

Income						
Abuse	-0.06	<.001	54.08	.01	0.94	0.92-0.96
Neglect	-0.06	<.001	52.87	.01	0.94	0.93-0.96
House. Dys.	-0.06	<.001	44.85	.01	0.95	0.93-0.96
Mil. Exp.						
Abuse	-0.07	.171	1.87	.05	0.93	0.84-1.03
Neglect	-0.02	.671	0.18	.05	0.98	0.89-1.08
House. Dys.	-0.04	.479	0.50	.05	0.97	0.87-1.07
Education						
Abuse	0.04	<.001	48.49	.01	1.04	1.03-1.06
Neglect	0.05	<.001	77.12	.05	1.05	1.04-1.07
House. Dys.	0.05	<.001	76.95	.01	1.05	1.04-1.07
Par MH[2]						
Abuse	0.97	<.001	2422.59	.02	2.63	2.53– 2.73
Neglect	1.03	<.001	2801.11	.02	2.80	2.69-2.90
House. Dys.	1.02	<.001	2674.75	.02	2.77	2.67-2.88
ACE Type						
Abuse	0.37	<.001	806.72	.01	1.44	1.41-1.48
Neglect	0.40	<.001	368.62	.02	1.49	1.43-1.55
House. Dys.	0.21	<.001	209.46	.02	1.24	1.20-1.28
Struc. Sup.						
Abuse	-0.02	.209	1.58	.01	0.98	0.96-1.01
Neglect	-0.02	.208	1.58	.01	0.98	0.96-1.01
House. Dys.	-0.02	.222	1.49	.01	0.98	0.96-1.01
Func. Sup.						
Abuse	-0.24	<.001	295.60	.01	0.79	0.77-0.81
Neglect	-0.24	<.001	279.68	.01	0.79	0.77-0.81
House. Dys.	-0.28	<.001	417.02	.01	0.76	0.74-0.78
SS Int.						
Abuse	-0.02	.248	1.34	.01	0.99	0.96-1.01
Neglect	-0.02	.366	0.82	.02	0.98	0.94-1.02
House. Dys.	0.01	.422	0.59	.01	1.01	0.98-1.04
FS Int.						
Abuse	-0.01	.608	0.26	.01	1.00	0.97-1.02
Neglect	0.04	.028	4.82	.02	1.04	1.00-1.08
House. Dys.	-0.03	.041	4.16	.02	0.97	0.94-1.00

Note:

House Dys = Household Dysfunction

[1] F = F= Female

[2]Mil. Exp. Represents participants having any history of participation in the military.

[3]Par MH = Parent Mental Health

[4]SS Int. Represents the interaction between structural support and each ACE.

[5]FS Int. Represents the interaction between functional support and each ACE.

Note: *The following table includes the output for each model by mental health outcome for each variable by race. For example, the first group labeled age under the label* ***AIAN Sample – GAD as the Outcome*** *presents the data for the association between age and GAD for the American Indian/Alaska Native sample by each ACE type, so the first line under age, labeled AB, would be the output for the association between age and GAD in a model considering abuse history for AIAN participants.*

Table 2A

Hierarchical Regression Output – Race Groups

AIAN Sample – GAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	.147	2.10	.01	1.01	1.00-1.03
Neglect	0.01	.180	1.80	.01	1.01	1.00-1.03
House. Dys.	0.01	.116	2.47	.01	1.01	1.00-1.03
Sex[1]						
Abuse	0.99	<.001	12.86	.28	2.68	1.56-4.59
Neglect	1.02	<.001	13.85	.28	2.79	1.62-4.78
House. Dys.	1.03	<.001	13.93	.28	2.80	1.63-4.81
Income						
Abuse	-0.10	.197	1.66	.08	0.90	0.77-1.06
Neglect	-0.10	.214	1.54	.08	0.91	0.77-1.06
House. Dys.	-0.12	.152	2.05	.08	0.89	0.76-1.04
Mil. Exp.						
Abuse	0.05	.903	0.73	.41	1.05	0.47-2.36
Neglect	0.13	.753	0.10	.41	1.14	0.51-2.53
House. Dys.	0.09	.834	0.04	.41	1.09	0.48-2.46
Education						
Abuse	0.05	.394	0.73	.06	1.06	0.93-1.19
Neglect	0.06	.358	0.84	.06	1.06	0.94-1.20
House. Dys.	0.07	.297	1.09	.06	1.07	0.94-1.21
Par MH[2]						
Abuse	0.82	<.001	25.61	.16	2.27	1.65-3.13
Neglect	0.80	<.001	25.36	.16	2.22	1.63-3.03
House. Dys.	0.81	<.001	25.56	.16	2.25	1.65-3.09

Table 2A (cont'd)

ACE Type						
Abuse	0.13	.253	1.31	.11	1.14	0.91-1.42
Neglect	0.36	.053	3.74	.19	1.43	1.00-2.06
House. Dys.	0.16	.171	1.88	.12	1.17	0.94-1.47
Struc. Sup.						
Abuse	0.26	.042	4.13	.13	1.30	1.01-1.68
Neglect	0.24	.064	3.42	.13	1.27	0.99-1.64
House. Dys.	0.26	.053	3.75	.13	1.29	1.00-1.67
Func. Sup.						
Abuse	-0.21	.088	2.91	.13	0.81	0.63-1.03
Neglect	-0.20	.102	2.67	.12	0.82	0.65-1.04
House. Dys.	-0.18	.131	2.28	.12	0.83	0.66-1.06
SS Int.						
Abuse	-0.09	.414	0.67	.12	0.92	0.75-1.13
Neglect	0.16	.450	0.57	.21	1.17	0.78-1.75
House. Dys.	-0.10	.378	0.78	.11	0.91	0.73-1.13
FS Int.						
Abuse	-0.04	.672	0.18	.10	0.96	0.79-1.16
Neglect	-0.06	.684	0.17	.15	0.94	0.70-1.26
House. Dys.	-0.15	.146	2.11	.11	0.86	0.70-1.05
AIAN Sample – PD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.01	.241	1.37	.01	1.01	0.99-1.02
Neglect	0.01	.385	0.76	.01	1.01	0.99-1.02
House. Dys.	0.01	.252	1.31	.01	1.01	0.99-1.02
Sex[1]						
Abuse	0.48	.043	4.08	.24	1.62	1.01-2.59
Neglect	0.55	.021	5.31	.24	1.73	1.09-2.77
House. Dys.	0.56	.018	5.60	.24	1.76	1.10-2.80
Income						
Abuse	-0.05	.536	0.38	.07	0.96	0.83-1.12
Neglect	-0.04	.584	0.30	.07	0.96	0.83-1.11
House. Dys.	-0.05	.469	0.53	.08	0.95	0.82-1.10
Mil. Exp.						
Abuse	-0.27	.479	0.50	.38	0.77	0.37-1.60
Neglect	-0.13	.732	0.12	.37	0.88	0.43-1.82
House. Dys.	-0.14	.700	0.15	.37	0.87	0.42-1.80
Education						
Abuse	0.01	.851	0.04	.06	1.01	0.90-1.13
Neglect	0.02	.703	0.15	.06	1.02	0.91-1.15
House. Dys.	0.03	.612	0.26	.06	1.03	0.92-1.15

Table 2A (cont'd)

Par MH[2]						
Abuse	0.76	<.001	25.04	.15	2.14	1.59-2.90
Neglect	0.80	<.001	28.69	.15	2.23	1.67-3.00
House. Dys.	0.83	<.001	30.08	.15	2.30	1.71-3.09
ACE Type						
Abuse	0.32	.002	9.52	.12	1.38	1.13-1.70
Neglect	0.47	.008	7.13	.18	1.60	1.13-2.25
House. Dys.	0.20	.061	3.51	.10	1.22	0.99-1.49
Struc. Sup.						
Abuse	-0.15	.267	1.23	.13	0.87	0.67-1.12
Neglect	-0.15	.239	1.38	.13	0.86	0.67-1.10
House. Dys.	-0.12	.371	0.80	.13	0.89	0.69-1.15
Func. Sup.						
Abuse	0.12	.392	0.73	.15	1.11	0.87-1.42
Neglect	0.09	.430	0.62	.12	1.10	0.87-1.38
House. Dys.	0.04	.745	0.11	.11	1.04	0.83-1.30
SS Int.						
Abuse	-0.02	.841	0.04	.12	0.98	0.80-1.20
Neglect	0.10	.616	0.25	.21	1.11	0.74-1.66
House. Dys.	-0.15	.166	1.92	.12	0.86	0.70-1.06
FS Int.						
Abuse	-0.09	.365	0.82	.10	0.92	0.76-1.11
Neglect	-0.10	.517	0.42	.15	0.91	0.68-1.21
House. Dys.	-0.04	.690	0.16	.09	0.96	0.80-1.56
AIAN Sample – SAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	.391	0.74	.01	0.99	0.98-1.01
Neglect	0.38	.090	2.87	.23	1.46	0.94-2.28
House. Dys.	-0.01	.465	0.53	.01	1.00	0.98-1.01
Sex[1]						
Abuse	0.35	.121	2.41	.23	1.42	0.91-2.21
Neglect	0.38	.090	2.87	.23	1.46	0.94-2.28
House. Dys.	0.39	.083	3.01	.23	1.48	0.95-2.31
Income						
Abuse	-0.06	.398	2.41	.07	0.94	0.82-1.08
Neglect	-0.06	.397	0.72	.07	0.94	0.82-1.08
House. Dys.	-0.09	.238	1.39	.07	0.92	0.80-1.06
Mil. Exp.						
Abuse	-1.21	.005	8.07	.43	0.30	0.13-0.69
Neglect	-1.17	.006	7.69	.42	0.31	0.14-0.71
House. Dys.	-1.23	.005	7.97	.43	0.29	0.13-0.69

Table 2A (cont'd)

Education						
Abuse	-0.03	.580	0.31	.06	0.97	0.87-1.08
Neglect	-0.02	.712	0.14	.06	0.98	0.88-1.09
House. Dys.	-0.02	.770	0.09	.06	0.98	0.88-1.10
Par MH[2]						
Abuse	0.63	<.001	17.09	.15	1.88	1.39-2.54
Neglect	0.67	<.001	20.04	.15	1.96	1.46-2.64
House. Dys.	0.68	<.001	19.71	.15	1.98	1.46-2.67
ACE Type						
Abuse	0.21	.043	1.39	.10	1.23	1.01-1.50
Neglect	0.20	.239	1.39	.11	1.22	0.88-1.71
House. Dys.	0.10	.348	0.88	.12	1.10	0.90-1.35
Struc. Sup.						
Abuse	-0.04	.096	0.10	.12	0.96	0.76-1.22
Neglect	-0.04	.749	0.10	.12	0.96	0.76-1.22
House. Dys.	-0.01	.964	0.00	.12	1.00	0.78-1.26
Func. Sup.						
Abuse	-0.19	.107	2.70	.11	0.83	0.67-1.04
Neglect	-0.19	.096	2.78	.11	0.83	0.67-1.03
House. Dys.	-0.12	.272	1.21	.11	0.89	0.71-1.10
SS Int.						
Abuse	-0.10	.898	0.02	.10	1.01	0.83-1.24
Neglect	-0.10	.621	0.24	.20	0.91	0.62-1.34
House. Dys.	-0.21	.051	3.80	.11	0.81	0.65-1.00
FS Int.						
Abuse	0.05	.573	0.32	.09	1.05	0.88-1.25
Neglect	0.12	.403	0.70	.20	1.23	0.85-1.49
House. Dys.	-0.15	.130	2.29	.10	0.86	0.71-1.05
AIAN Sample – Depression as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.02	.002	9.64	.01	1.02	1.01-1.04
Neglect	0.02	.003	9.09	.01	1.02	1.01-1.04
House. Dys.	0.02	.001	10.10	.01	1.02	1.01-1.04
Sex (F)[1]						
Abuse	0.99	<.001	17.38	.24	2.69	1.69-4.29
Neglect	1.05	<.001	19.43	.24	2.85	1.79-4.53
House. Dys.	1.08	<.001	20.73	.24	2.95	1.85-4.70

Table 2A (cont'd)

Income						
Abuse	-0.06	.942	0.69	.07	0.94	0.82-1.09
Neglect	-0.06	.410	0.68	.07	0.94	0.82-1.09
House. Dys.	-0.07	.310	1.03	.07	0.93	0.81-1.07
Mil. Exp.						
Abuse	0.27	.454	0.56	.36	1.31	0.65-2.65
Neglect	0.33	.355	0.86	.36	1.39	0.69-2.79
House. Dys.	0.36	.313	1.02	.36	1.43	0.71-2.89
Education						
Abuse	0.05	.393	0.73	.06	1.05	0.94-1.17
Neglect	0.06	.278	1.17	.06	1.06	0.95-1.19
House. Dys.	0.06	.274	1.20	.06	1.06	0.95-1.18
Par MH[2]						
Abuse	0.98	<.001	40.30	.16	2.67	1.97-3.61
Neglect	1.04	<.001	45.45	.15	2.82	2.09-3.81
House. Dys.	1.01	<.001	41.25	.16	2.75	2.02-3.74
ACE Type						
Abuse	0.25	.016	5.82	.10	1.29	1.05-1.58
Neglect	0.31	.077	3.14	.17	1.36	0.97-1.92
House. Dys.	0.18	.100	2.71	.12	1.19	0.97-1.47
Struc. Sup.						
Abuse	-0.01	.951	0.00	.12	0.99	0.78-1.26
Neglect	0.00	.973	0.00	.12	1.00	0.80-1.27
House. Dys.	0.05	.648	0.21	.12	1.06	0.84-1.33
Func. Sup.						
Abuse	-0.24	.029	4.74	.11	0.79	0.63-0.98
Neglect	-0.31	.008	7.15	.12	0.73	0.59-0.92
House. Dys.	-0.28	.008	6.99	.11	0.75	0.61-0.93
SS Int.						
Abuse	-0.01	.889	0.02	.10	0.99	0.81-1.21
Neglect	-0.13	.511	0.43	.20	0.88	0.60-1.29
House. Dys.	-0.20	.065	3.41	.11	0.82	0.70-1.01
FS Int.						
Abuse	-0.02	.872	0.03	.09	0.99	0.82-1.18
Neglect	0.24	.097	2.75	.14	1.27	0.96-1.68
House. Dys.	0.04	.672	0.18	.09	1.04	0.87-1.25

ANHPI Sample – GAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	.102	2.68	.01	0.99	0.98-1.00
Neglect	-0.01	.028	4.84	.01	0.99	0.98-1.00
House. Dys.	-0.01	.043	4.11	.01	0.99	0.98-1.00

Table 2A (cont'd)

Sex[1]						
Abuse	0.47	.005	7.91	.17	1.60	1.15-2.22
Neglect	0.42	.011	6.55	.17	1.53	1.10-2.11
House. Dys.	0.39	.017	5.65	.17	1.48	1.07-2.05
Income						
Abuse	-0.07	.130	2.30	.05	0.93	0.85-1.02
Neglect	-0.07	.168	1.91	.05	0.94	0.86-1.03
House. Dys.	-0.07	.149	2.09	.05	0.93	0.85-1.03
Mil. Exp.						
Abuse	0.33	.476	0.51	.46	1.39	0.56-3.46
Neglect	0.51	.257	1.28	.45	1.67	0.69-4.05
House. Dys.	0.50	.286	1.14	.47	1.64	0.66-4.08
Education						
Abuse	0.06	<.001	2.97	.04	1.06	0.99-1.14
Neglect	0.07	.055	3.69	.04	1.07	1.00-1.15
House. Dys.	0.07	.044	4.05	.04	1.07	1.00-1.15
Par MH[2]						
Abuse	0.70	<.001	38.22	.11	2.01	1.61-2.50
Neglect	0.76	<.001	46.83	.11	2.14	1.72-2.66
House. Dys.	0.79	<.001	51.77	.11	2.21	1.78-2.74
ACE Type						
Abuse	0.33	<.001	14.46	.09	1.39	1.17-1.64
Neglect	0.28	.051	3.82	.15	1.33	1.00-1.77
House. Dys.	0.07	.568	0.33	.13	1.07	0.84-1.38
Struc. Sup.						
Abuse	-0.15	.111	2.54	.09	0.86	0.72-1.04
Neglect	-0.15	.103	2.66	.09	0.86	0.72-1.03
House. Dys.	-0.14	.209	1.58	.11	0.87	0.71-1.08
Func. Sup.						
Abuse	-0.24	.004	8.50	.08	0.79	0.67-0.92
Neglect	-0.26	.002	9.47	.08	0.77	0.66-0.91
House. Dys.	-0.31	<.001	12.25	.09	0.73	0.61-0.87
SS Int.						
Abuse	-0.09	.367	0.81	.10	0.92	0.76-1.11
Neglect	0.11	.497	0.46	.16	1.12	0.82-1.52
House. Dys.	0.05	.763	0.09	.15	1.05	0.78-1.40
FS Int.						
Abuse	-0.04	.634	0.23	.08	0.96	0.83-1.13
Neglect	0.08	.498	0.46	.12	1.08	0.86-1.36
House. Dys.	-0.15	.234	1.42	.13	0.86	0.67-1.10

Table 2A (cont'd)

ANHPI Sample – PD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	.182	1.78	.01	0.99	0.98-1.00
Neglect	-0.01	.074	3.18	.01	0.99	0.98-1.00
House. Dys.	-0.01	.124	2.37	.01	0.99	0.98-1.00
Sex[1]						
Abuse	0.33	.044	4.07	.17	1.40	1.01-1.93
Neglect	0.29	.082	3.03	.16	1.33	0.97-1.83
House. Dys.	0.26	.108	2.58	.16	1.30	0.94-1.79
Income						
Abuse	-0.04	.354	0.86	.05	0.96	0.87-1.05
Neglect	-0.03	.479	0.50	.05	0.97	0.88-1.06
House. Dys.	-0.04	.363	0.83	.05	0.96	0.87-1.05
Mil. Exp.						
Abuse	-0.69	.271	1.21	.62	0.50	0.15-1.71
Neglect	-0.55	.380	0.77	.62	0.58	0.17-1.96
House. Dys.	-0.54	.393	0.73	.63	0.59	0.17-2.00
Education						
Abuse	0.04	.217	1.53	.04	1.05	0.98-1.12
Neglect	0.05	.139	2.18	.04	1.05	0.98-1.13
House. Dys.	0.06	.104	2.64	.04	1.06	0.99-1.14
Par MH[2]						
Abuse	0.53	<.001	21.19	.12	1.70	1.36-2.14
Neglect	0.59	<.001	26.71	.12	1.81	1.44-2.26
House. Dys.	0.62	<.001	29.80	.11	1.86	1.49-2.32
ACE Type						
Abuse	0.35	<.001	17.10	.09	1.42	1.20-1.68
Neglect	0.37	.010	6.60	.14	1.45	1.09-1.92
House. Dys.	0.20	.100	2.71	.12	1.22	0.96-1.54
Struc. Sup.						
Abuse	-0.13	.168	1.90	.09	0.88	0.74-1.06
Neglect	-0.14	.134	2.25	.09	0.87	0.73-1.04
House. Dys.	-0.11	.298	1.08	.10	0.90	0.74-1.10
Func. Sup.						
Abuse	-0.14	.091	2.85	.08	0.87	0.74-1.02
Neglect	-0.16	.071	3.27	.09	0.86	0.72-1.01
House. Dys.	-0.18	.048	3.90	.09	0.84	0.70-1.00
SS Int.						
Abuse	-0.04	.708	0.14	.09	0.97	0.81-1.16
Neglect	-0.22	.171	1.87	.16	0.81	0.59-1.10
House. Dys.	0.08	.541	0.37	.14	1.09	0.83-1.42

Table 2A (cont'd)

FS Int.						
Abuse	0.07	.369	0.81	.08	1.08	0.92-1.26
Neglect	0.18	.140	2.18	.12	1.20	0.94-1.52
House. Dys.	-0.04	.752	0.10	.12	0.96	0.76-1.23
ANHPI Sample – SAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.02	<.001	24.53	.00	0.98	0.97-0.99
Neglect	-0.02	<.001	27.71	.00	0.98	0.97-0.99
House. Dys.	-0.02	<.001	25.10	.00	0.98	0.97-0.99
Sex[1]						
Abuse	-0.04	.790	0.07	.13	0.97	0.75-1.25
Neglect	-0.05	.691	0.16	.13	0.95	0.74-1.23
House. Dys.	-0.09	.480	0.50	.13	0.91	0.71-1.18
Income						
Abuse	0.04	.289	1.12	.04	1.04	0.97-1.12
Neglect	0.04	.289	1.13	.04	1.04	0.97-1.12
House. Dys.	0.04	.343	0.90	.04	1.04	0.96-1.12
Mil. Exp.						
Abuse	0.20	.599	0.28	.38	1.22	0.58-2.55
Neglect	0.28	.462	0.54	.38	1.32	0.63-2.74
House. Dys.	0.28	.469	0.53	.38	1.32	0.63-2.78
Education						
Abuse	0.04	.225	1.48	.03	1.04	0.98-1.10
Neglect	0.04	.125	2.36	.03	1.05	0.99-1.11
House. Dys.	0.05	.113	2.53	.03	1.05	0.99-1.12
Par MH[2]						
Abuse	0.54	<.001	28.27	.10	1.71	1.40-2.09
Neglect	0.53	<.001	28.41	.10	1.70	1.40-2.07
House. Dys.	0.59	<.001	34.71	.10	1.80	1.48-2.18
ACE Type						
Abuse	0.25	<.001	13.11	.07	1.29	1.12-1.48
Neglect	0.45	<.001	14.94	.12	1.56	1.25-1.96
House. Dys.	0.14	.175	1.84	.10	1.15	0.94-1.40
Struc. Sup.						
Abuse	-0.19	.010	6.70	.07	0.83	0.72-0.96
Neglect	-0.17	.017	5.71	.07	0.84	0.73-0.97
House. Dys.	-0.20	.025	5.02	.09	0.82	0.69-0.98
Func. Sup.						
Abuse	-0.24	<.001	12.21	.07	0.79	1.40-2.09
Neglect	-0.23	.001	10.44	.07	0.80	0.70-0.92
House. Dys.	-0.31	<.001	16.52	.08	0.73	0.63-0.85

Table 2A (cont'd)

SS Int.						
Abuse	-0.15	.056	3.65	.08	0.87	0.75-1.00
Neglect	0.03	.801	0.06	.13	1.03	0.81-1.32
House. Dys.	-0.06	.656	0.20	.12	0.95	0.74-1.20
FS Int.						
Abuse	0.12	.078	3.10	.07	1.13	0.99-1.28
Neglect	0.07	.476	0.51	.10	1.07	0.88-1.30
House. Dys.	-0.18	.114	2.50	.11	0.84	0.68-1.04
ANHPI Sample – Depression as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	.188	1.74	.00	0.99	0.99-1.00
Neglect	-0.01	.082	3.03	.00	0.99	0.99-1.00
House. Dys.	-0.01	.166	1.92	.00	0.99	0.99-1.00
Sex (F)[1]						
Abuse	0.57	<.001	17.04	.14	1.76	1.35-2.30
Neglect	0.55	<.001	16.23	.14	1.73	1.33-2.27
House. Dys.	0.50	<.001	13.65	.14	1.65	1.27-2.15
Income						
Abuse	0.02	.675	0.18	.04	1.02	0.94-1.10
Neglect	0.02	.557	0.34	.04	1.02	0.95-1.10
House. Dys.	0.02	.635	0.23	.04	1.02	0.95-1.10
Mil. Exp.						
Abuse	-0.31	.463	0.54	.43	0.73	0.32-1.69
Neglect	-0.17	.687	0.16	.42	0.85	0.37-1.91
House. Dys.	-0.22	.605	0.27	.42	0.80	0.35-1.84
Education						
Abuse	0.02	.540	0.38	.03	1.02	0.96-1.08
Neglect	0.03	.332	0.94	.03	1.03	0.97-1.09
House. Dys.	0.03	.303	1.06	.03	1.03	0.97-1.09
Par MH[2]						
Abuse	1.06	<.001	106.23	.10	2.89	2.36-3.53
Neglect	1.09	<.001	115.18	.10	2.99	2.45-3.65
House. Dys.	1.10	<.001	114.36	.10	2.99	2.45-3.66
ACE Type						
Abuse	0.34	<.001	22.79	.07	1.40	1.22-1.61
Neglect	0.65	<.001	29.45	.12	1.91	1.51-2.41
House. Dys.	0.33	.001	10.42	.10	1.39	1.14-1.70
Struc. Sup.						
Abuse	-0.09	.241	1.37	.07	0.92	0.80-1.06
Neglect	-0.08	.296	1.09	.07	0.93	0.80-1.07
House. Dys.	-0.09	.295	1.10	.09	0.91	0.77-1.08

Table 2A (cont'd)

Func. Sup.						
Abuse	-0.19	.007	7.22	.07	0.83	0.73-0.95
Neglect	-0.19	.006	7.49	.07	0.83	0.72-0.95
House. Dys.	-0.22	.004	8.24	.08	0.81	0.70-0.93
SS Int.						
Abuse	-0.09	.225	1.47	.07	0.91	0.79-1.06
Neglect	0.00	.975	0.00	.13	1.00	0.78-1.28
House. Dys.	-0.04	.719	0.13	.12	0.96	0.76-1.21
FS Int.						
Abuse	0.02	.748	0.10	.07	1.02	0.90-1.17
Neglect	0.25	.018	5.64	.10	1.28	1.04-1.56
House. Dys.	-0.02	.837	0.04	.12	0.98	0.80-1.20

Black Sample – GAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.01	.006	7.45	.00	1.01	1.00-1.01
Neglect	0.01	.007	7.29	.07	1.01	1.00-1.01
House. Dys.	0.01	.001	10.60	.00	1.01	1.00-1.01
Sex (F)[1]						
Abuse	0.32	<.001	18.86	.07	1.38	1.19-1.59
Neglect	0.34	<.001	21.52	.07	1.40	1.22-1.62
House. Dys.	0.31	<.001	18.32	.07	1.37	1.18-1.58
Income						
Abuse	-0.08	.002	9.52	.03	0.93	0.88-0.97
Neglect	-0.07	.004	8.33	.03	0.93	0.89-0.98
House. Dys.	-0.07	.005	7.82	.03	0.93	0.89-0.98
Mil. Exp.						
Abuse	0.18	0.16	1.95	.13	1.20	0.93-1.55
Neglect	0.21	.106	2.61	.13	1.23	0.96-1.59
House. Dys.	0.20	.125	2.35	.13	1.22	0.95-1.57
Education						
Abuse	-0.01	.634	0.23	.02	0.99	0.96-1.03
Neglect	0.01	.725	0.12	.02	1.01	0.97-1.04
House. Dys.	0.01	.676	0.18	.02	1.01	0.97-1.04
Par MH[2]						
Abuse	0.81	<.001	227.90	.05	2.24	2.02-2.49
Neglect	0.74	<.001	287.28	.05	2.42	2.19-2.68
House. Dys.	0.87	<.001	274.41	.05	2.39	2.16-2.65
ACE Type						
Abuse	0.33	<.001	96.73	.03	1.39	1.30-1.49
Neglect	0.38	<.001	46.10	.06	1.47	1.31-1.64
House. Dys.	0.23	<.001	38.06	.04	1.26	1.17-1.36

Table 2A (cont'd)

Struc. Sup.						
Abuse	0.08	.026	4.93	.04	1.39	1.01-1.16
Neglect	0.07	.044	4.07	.04	1.08	1.00-1.15
House. Dys.	0.07	.061	3.51	.04	1.07	1.00-1.15
Func. Sup.						
Abuse	-0.20	<.001	34.07	.04	0.82	0.76-0.87
Neglect	-0.20	<.001	33.78	.04	0.82	0.76-0.88
House. Dys.	-0.24	<.001	51.97	.03	0.78	0.73-0.84
SS Int.						
Abuse	-0.09	.007	7.26	.03	0.91	0.85-0.98
Neglect	-0.01	.810	0.06	.06	0.88	0.88-1.11
House. Dys.	-0.06	.101	2.69	.04	0.94	0.87-1.01
FS Int.						
Abuse	0.02	.556	0.35	.03	1.02	0.96-1.08
Neglect	0.05	.282	1.16	.05	1.05	0.96-1.16
House. Dys.	0.06	.071	3.27	.03	1.06	1.00-1.34

Black Sample – PD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.765	.089	.00	1.00	1.00-1.01
Neglect	0.00	.694	.155	.00	1.00	1.63-2.19
House. Dys.	0.00	.201	1.64	.00	1.00	0.99-1.01
Sex[1]						
Abuse	0.61	<.001	64.13	.08	1.84	1.58-2.13
Neglect	0.64	<.001	70.54	.08	1.89	1.63-2.19
House. Dys.	0.60	<.001	62.95	.08	1.82	1.57-2.12
Income						
Abuse	-0.07	.003	8.53	.03	0.93	0.88-0.98
Neglect	-0.07	.009	70.54	.03	0.94	0.89-0.98
House. Dys.	-0.06	.016	5.82	.03	0.94	1.57-2.12
Mil. Exp.						
Abuse	0.26	.055	3.68	.13	1.29	0.99-1.68
Neglect	0.30	.024	5.09	.13	1.35	1.04-1.75
House. Dys.	0.27	.040	4.20	.13	1.31	1.01-1.70
Education						
Abuse	0.02	.226	1.47	.02	1.02	0.99-1.06
Neglect	0.04	.026	4.93	.02	1.04	1.01-1.08
House. Dys.	0.04	.016	5.80	.02	1.04	1.01-1.08
Par MH[2]						
Abuse	0.64	<.001	477.23	.03	1.77	1.68-1.86
Neglect	0.74	<.001	196.34	.02	2.09	1.89-2.32
House. Dys.	0.71	<.001	176.99	.05	2.03	1.83-2.26

Table 2A (cont'd)

ACE Type						
Abuse	0.42	<.001	138.97	.05	1.89	1.70-2.10
Neglect	0.49	<.001	74.86	.06	1.63	1.46-1.81
House. Dys.	0.35	<.001	91.82	.04	1.42	1.32-1.53
Struc. Sup.						
Abuse	0.07	.080	3.07	.04	1.07	0.99-1.15
Neglect	0.07	.067	3.35	.04	1.07	1.00-1.15
House. Dys.	0.04	.288	1.13	.04	1.04	0.97-1.12
Func. Sup.						
Abuse	-0.17	<.001	22.86	.04	0.84	0.79-0.90
Neglect	-0.16	<.001	20.34	.04	0.85	0.80-0.91
House. Dys.	-0.22	<.001	39.30	.03	0.81	0.75-0.86
SS Int.						
Abuse	-0.03	.442	0.59	.03	0.97	0.91-1.04
Neglect	0.06	.329	0.95	.06	1.06	0.94-1.19
House. Dys.	0.04	.246	1.35	.04	1.05	0.97-1.13
FS Int.						
Abuse	0.03	.276	1.19	.03	1.03	0.97-1.10
Neglect	0.04	.415	0.66	.05	1.04	0.95-1.15
House. Dys.	0.06	.066	3.37	.03	1.07	1.00-1.13

Black Sample – SAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	<.001	31.47	.00	0.99	0.98-0.99
Neglect	-0.01	<.001	30.54	.06	0.99	0.98-0.99
House. Dys.	-0.01	<.001	24.69	.02	0.99	0.98-0.99
Sex[1]						
Abuse	0.44	<.001	49.78	.06	1.55	1.37-1.75
Neglect	0.45	<.001	52.76	.06	1.57	1.39-1.77
House. Dys.	0.43	<.001	48.77	.06	1.54	1.37-1.74
Income						
Abuse	-0.04	044	4.06	.02	0.96	0.92-1.00
Neglect	-0.04	.075	3.18	.02	0.96	0.92-1.00
House. Dys.	-0.04	.078	3.11	.02	0.96	0.92-1.00
Mil. Exp.						
Abuse	0.05	.673	0.18	.12	1.05	0.83-1.33
Neglect	0.08	.502	0.45	.12	1.08	0.86-1.36
House. Dys.	0.07	.568	0.33	.12	1.01	0.85-1.35
Education						
Abuse	-0.05	.002	9.57	.02	0.95	0.92-0.98
Neglect	-0.04	.026	4.99	.02	0.97	0.94-1.00
House. Dys.	-0.03	.033	4.53	.02	0.97	0.94-1.00

Table 2A (cont'd)

Par MH[2]						
Abuse	0.53	<.001	109.05	.05	1.69	1.53-1.87
Neglect	0.61	<.001	152.82	.05	1.84	1.67-2.02
House. Dys.	0.60	<.001	44.11	.05	1.82	1.65-2.00
ACE Type						
Abuse	0.30	<.001	106.17	.03	1.35	1.53-1.87
Neglect	0.32	<.001	41.26	.05	1.37	1.25-1.51
House. Dys.	0.19	<.001	33.49	.03	1.21	1.14-1.29
Struc. Sup.						
Abuse	-0.02	.497	0.46	.03	0.98	0.92-1.04
Neglect	-0.02	.605	0.27	.03	0.98	0.92-1.05
House. Dys.	-0.03	.384	0.76	.03	0.97	0.91-1.04
Func. Sup.						
Abuse	-0.20	<.001	45.29	.03	0.82	0.77-0.87
Neglect	-0.21	<.001	48.44	.03	0.81	0.77-0.86
House. Dys.	-0.23	<.001	63.44	.03	0.79	0.75-0.84
SS Int.						
Abuse	-0.04	.224	1.48	.03	0.96	0.91-1.02
Neglect	0.08	.151	2.06	.05	1.08	0.97-1.20
House. Dys.	-0.02	.747	0.37	.04	0.98	0.91-1.05
FS Int.						
Abuse	-0.01	.832	0.05	.03	0.99	0.94-1.05
Neglect	0.04	.335	0.93	.04	1.04	0.96-1.13
House. Dys.	0.10	1.01	0.10	.03	1.01	0.95-1.07
Black Sample – Depression as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.799	0.07	.00	1.00	0.99-1.00
Neglect	0.00	.773	0.08	.00	1.00	0.99-1.00
House. Dys.	0.00	.219	1.51	.00	1.00	1.00-1.01
Sex (F)[1]						
Abuse	0.48	<.001	54.44	.07	1.61	1.42-1.83
Neglect	0.49	<.001	57.81	.06	1.63	1.44-1.84
House. Dys.	0.46	<.001	51.87	.06	1.58	1.40-1.80
Income						
Abuse	-0.10	<.001	19.17	.02	0.91	0.87-0.95
Neglect	-0.09	<.001	16.49	.02	0.92	0.88-0.96
House. Dys.	-0.09	<.001	15.14	.02	0.92	0.88-0.96
Mil. Exp.						
Abuse	0.21	.072	3.24	.12	1.23	0.98-1.60
Neglect	0.25	.033	4.54	.12	1.28	1.02-1.60
House. Dys.	0.23	.048	3.92	.12	1.26	1.00-1.57

Table 2A (cont'd)

Education						
Abuse	0.01	.669	0.18	.02	1.01	0.98-1.04
Neglect	0.03	.113	2.51	.02	1.03	0.99-1.06
House. Dys.	0.03	.062	3.49	.02	1.03	1.00-1.06
Par MH[2]						
Abuse	0.93	<.001	374.17	.05	2.52	2.30-2.77
Neglect	1.01	<.001	156.05	.05	2.74	2.50-3.01
House. Dys.	0.97	<.001	415.19	.05	2.65	2.41-2.91
ACE Type						
Abuse	0.42	<.001	382.26	.02	1.41	1.36-1.46
Neglect	0.39	<.001	61.03	.05	1.48	1.34-1.63
House. Dys.	0.29	<.001	74.47	.03	1.34	1.25-1.43
Struc. Sup.						
Abuse	0.01	.834	0.04	.03	1.01	0.94-1.07
Neglect	0.01	.771	0.08	.03	1.01	0.95-1.08
House. Dys.	-0.01	.804	0.06	.03	0.99	0.93-1.06
Func. Sup.						
Abuse	-0.25	<.001	65.97	.03	0.78	0.74-0.83
Neglect	-0.25	<.001	68.87	.03	0.78	0.73-0.83
House. Dys.	-0.29	<.001	93.79	.03	0.75	0.71-0.80
SS Int.						
Abuse	-0.03	.309	1.04	.03	0.97	0.91-1.03
Neglect	0.01	.852	0.04	.05	1.01	0.91-1.12
House. Dys.	0.03	.329	0.95	.04	1.04	0.97-1.11
FS Int.						
Abuse	0.02	.537	0.38	.03	1.02	0.96-1.07
Neglect	0.06	.158	1.99	.04	1.06	0.98-1.16
House. Dys.	0.00	.961	0.00	.03	1.00	0.94-1.07

Hispanic Sample – GAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.01	<.001	16.23	.00	1.01	1.01-1.02
Neglect	0.01	<.001	13.82	.00	1.01	1.27-1.73
House. Dys.	0.01	<.001	20.44	.00	1.01	1.01-1.02
Sex[1]						
Abuse	0.35	<.001	20.09	.08	1.42	1.22-1.65
Neglect	0.39	<.001	26.03	.08	1.48	1.27-1.73
House. Dys.	0.35	<.001	20.59	.08	1.42	1.22-1.65

Table 2A (cont'd)

Income						
Abuse	-0.12	<.001	17.29	.03	0.90	0.85-0.94
Neglect	-0.11	<.001	17.90	.03	0.90	0.85-0.94
House. Dys.	-0.10	<.001	14.50	.03	0.91	0.86-0.95
Mil. Exp.						
Abuse	0.26	.161	1.97	.18	1.29	0.90-1.85
Neglect	0.34	.064	3.44	.18	1.40	0.98-2.00
House. Dys.	0.32	.076	3.15	.18	1.38	0.97-1.97
Education						
AB:	0.07	<.001	20.82	.02	1.07	1.04-1.10
NEG:	0.09	<.001	31.68	.02	1.09	1.06-1.12
HD	0.08	<.001	24.87	.12	1.08	1.05-1.11
Par MH²						
Abuse	0.79	<.001	217.86	.05	2.19	1.98-2.44
Neglect	0.85	<.001	267.43	.05	2.34	2.11-2.59
House. Dys.	0.85	<.001	262.97	.05	2.33	2.11-2.58
ACE Type						
Abuse	0.32	<.001	78.18	.04	1.38	1.29-1.48
Neglect	0.39	<.001	42.21	.06	1.48	1.32-1.67
House. Dys.	0.26	<.001	42.13	.04	1.30	1.20-1.41
Struc. Sup.						
Abuse	-0.01	.800	0.06	.04	0.99	0.91-1.08
Neglect	-0.01	.782	0.08	.04	0.99	0.91-1.08
House. Dys.	-0.00	.956	0.00	.04	1.00	0.92-1.08
Func. Sup.						
Abuse	-0.24	<.001	46.24	.04	0.79	0.73-0.84
Neglect	-0.24	<.001	42.59	.04	0.79	0.73-0.85
House. Dys.	-0.27	<.001	59.91	.04	0.76	0.71-0.82
SS Int.						
Abuse	0.05	.235	1.41	.04	1.05	0.97-1.13
Neglect	0.11	.082	3.02	.07	1.12	0.99-1.27
House. Dys.	-0.02	.717	0.13	.04	0.98	0.90-1.07
FS Int.						
Abuse	0.02	.598	0.28	.03	1.02	0.96-1.08
Neglect	0.06	.241	1.37	.05	1.06	0.96-1.16
House. Dys.	0.04	.314	1.02	.04	1.04	0.97-1.11
Hispanic Sample – PD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.768	0.09	.00	1.00	0.99-1.00
Neglect	0.00	.484	0.49	.08	1.00	0.99-1.00
House. Dys.	0.00	.655	0.20	.00	1.00	1.00-1.01

Table 2A (cont'd)

Sex[1]						
Abuse	0.61	<.001	63.98	.08	1.84	1.58-2.13
Neglect	0.67	<.001	78.84	.08	1.95	1.67-2.26
House. Dys.	0.62	<.001	67.09	.08	1.86	1.60-2.15
Income						
Abuse	-0.03	.270	1.21	.03	0.97	0.93-1.02
Neglect	-0.03	.245	1.35	.18	0.97	0.93-1.02
House. Dys.	-0.01	.593	8.95	.03	0.99	0.94-1.04
Mil. Exp.						
Abuse	0.41	.020	5.38	.18	1.51	1.07-2.14
Neglect	0.53	.002	9.28	.18	1.71	1.21-2.41
House. Dys.	0.52	.003	8.95	.18	1.69	1.20-2.38
Education						
Abuse	0.07	<.001	23.48	.02	1.08	1.04-1.11
Neglect	0.09	<.001	41.04	.02	1.10	1.07-1.13
House. Dys.	0.08	<.001	29.20	.02	1.08	1.05-1.12
Par MH[2]						
Abuse	0.65	<.001	155.85	.05	1.92	1.73-2.13
Neglect	0.76	<.001	224.46	.05	2.14	1.93-2.36
House. Dys.	0.75	<.001	218.82	.05	2.13	1.92-2.35
ACE Type						
Abuse	0.50	<.001	207.31	.04	1.65	1.54-1.76
Neglect	0.53	<.001	86.14	.06	1.70	1.52-1.90
House. Dys.	0.34	<.001	80.51	.04	1.40	1.31-1.52
Struc. Sup.						
Abuse	0.03	.516	0.42	.04	1.03	0.95-1.11
Neglect	0.03	.510	0.44	.04	1.03	0.95-1.12
House. Dys.	0.03	.517	0.42	.04	1.03	0.95-1.12
Func. Sup.						
Abuse	-0.17	<.001	21.57	.04	0.85	0.79-0.91
Neglect	-0.16	<.001	19.47	.04	0.85	0.79-0.91
House. Dys.	-0.20	<.001	34.13	.04	0.82	0.76-0.88
SS Int.						
Abuse	0.01	.840	0.04	.04	1.01	0.94-1.08
Neglect	-0.03	.665	0.19	.06	0.97	0.86-1.10
House. Dys.	-0.03	.463	.540	.04	0.97	0.89-1.05
FS Int.						
Abuse	0.01	.719	0.13	.03	1.01	0.95-1.07
Neglect	0.07	.162	1.95	.05	1.07	0.97-1.17
House. Dys.	-0.05	.137	2.22	.04	0.95	0.89-1.02

Table 2A (cont'd)

Hispanic Sample – SAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	<.001	32.17	.00	0.99	0.98-0.99
Neglect	-0.01	<.001	35.76	.00	0.99	0.98-0.99
House. Dys.	-0.01	<.001	27.06	.00	0.99	0.99-0.99
Sex[1]						
Abuse	0.36	<.001	31.43	.07	1.44	1.27-1.63
Neglect	0.40	<.001	39.35	.06	1.50	1.32-1.70
House. Dys.	0.37	<.001	32.38	.06	1.44	1.27-1.64
Income						
Abuse	-0.07	.003	9.07	.02	1.44	1.27-1.63
Neglect	-0.07	.003	9.12	.02	0.94	0.90-0.98
House. Dys.	-0.06	.009	6.82	.02	0.95	0.91-0.99
Mil. Exp.						
Abuse	0.21	.207	1.59	.17	1.23	0.89-1.71
Neglect	0.29	.081	3.04	.17	1.33	0.97-1.84
House. Dys.	0.29	.075	3.16	.16	1.34	0.97-1.85
Education						
Abuse	0.08	<.001	37.83	.01	1.09	1.06-1.11
Neglect	0.10	<.001	56.33	.01	1.10	1.08-1.13
House. Dys.	0.09	<.001	45.78	.01	1.09	1.07-1.12
Par MH[2]						
Abuse	0.53	<.001	116.03	.05	1.69	1.54-1.86
Neglect	0.60	<.001	157.59	.05	1.82	1.66-2.00
House. Dys.	0.62	<.001	165.69	.05	1.85	1.69-2.03
ACE Type						
Abuse	0.36	<.001	132.73	.36	1.43	1.35-1.52
Neglect	0.42	<.001	65.73	.05	1.52	1.37-1.68
House. Dys.	0.22	<.001	38.41	.04	1.24	1.16-1.33
Struc. Sup.						
Abuse	-0.09	.011	6.42	.04	0.91	0.85-0.98
Neglect	-0.09	.011	6.47	.04	0.91	0.85-0.98
House. Dys.	-0.10	.008	7.00	.04	0.91	0.85-0.98
Func. Sup.						
Abuse	-0.27	<.001	74.99	.03	0.77	0.72-0.82
Neglect	-0.26	<.001	65.94	.03	0.77	0.73-0.82
House. Dys.	-0.30	<.001	99.13	.03	0.74	0.70-0.79
SS Int.						
Abuse	-0.03	.396	.721	.03	0.97	0.91-1.04
Neglect	-0.09	.133	2.26	.06	0.92	0.82-1.03
House. Dys.	-0.05	.255	1.30	.04	0.96	0.88-1.03

Table 2A (cont'd)

FS Int.						
Abuse	0.02	.425	0.64	.03	1.02	0.97-1.08
Neglect	0.08	.046	3.97	.04	1.09	1.00-1.18
House. Dys.	-0.05	.300	1.07	.03	1.03	0.88-1.03
Hispanic Sample – Depression as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.003	8.73	.00	1.01	1.00-1.01
Neglect	0.01	.011	6.53	.00	1.01	1.00-1.01
House. Dys.	0.01	<.001	11.58	.00	1.01	1.00-1.01
Sex (F)[1]						
Abuse	0.57	<.001	76.68	.07	1.76	1.55-2.00
Neglect	0.61	<.001	89.48	.06	1.83	1.62-2.08
House. Dys.	0.56	<.001	77.53	.06	1.75	1.55-1.99
Income						
Abuse	-0.08	<.001	12.10	.02	0.93	0.89-0.97
Neglect	-0.07	<.001	11.72	.02	0.93	0.89-0.97
House. Dys.	-0.07	.003	9.11	.02	0.94	0.90-0.98
Mil. Exp.						
Abuse	0.19	0.25	1.32	.16	1.21	0.88-1.66
Neglect	0.27	.099	2.72	.16	1.31	0.95-1.79
House. Dys.	0.27	.093	2.83	.16	1.31	0.96-1.80
Education						
Abuse	0.04	<.001	11.96	.01	1.05	1.02-1.07
Neglect	0.06	<.001	25.30	.01	1.07	1.04-1.09
House. Dys.	0.05	<.001	17.24	.01	1.05	1.03-1.08
Par MH[2]						
Abuse	0.90	<.001	388.56	.05	2.47	2.25-2.70
Neglect	0.98	<.001	476.64	.05	2.67	2.44-2.92
House. Dys.	0.95	<.001	433.23	.05	2.60	2.37-2.84
ACE Type						
Abuse	0.43	<.001	194.92	.03	1.53	1.44-1.62
Neglect	0.45	<.001	80.32	.05	1.56	1.42-1.72
House. Dys.	0.26	<.001	54.20	.04	1.30	1.21-1.39
Struc. Sup.						
Abuse	-0.04	.277	1.18	.04	0.96	0.90-1.03
Neglect	-0.04	.248	1.33	.04	0.96	0.90-1.03
House. Dys.	-0.04	.242	1.37	.04	0.96	0.90-1.03
Func. Sup.						
Abuse	-0.22	<.001	55.13	.03	0.80	0.75-0.85
Neglect	-0.22	<.001	47.73	.03	0.81	0.76-0.86
House. Dys.	-0.26	<.001	79.43	.04	0.77	0.73-0.81

Table 2A (cont'd)

SS Int.						
Abuse	-0.07	.044	4.06	.03	0.04	0.88-1.00
Neglect	-0.07	.213	1.55	.06	0.93	0.84-1.04
House. Dys.	0.01	.801	0.06	.04	1.01	0.94-1.09
FS Int.						
Abuse	0.04	.191	1.71	.03	1.04	0.98-1.09
Neglect	0.06	.124	2.37	.04	1.07	0.98-1.56
House. Dys.	-0.04	.235	1.41	.03	0.96	0.90-1.03
White Sample – GAD as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	0.52	3.79	.00	1.00	0.99-1.00
Neglect	0.00	0.12	2.43	.00	1.00	0.99-1.00
House. Dys.	0.10	0.01	5.99	.00	1.00	1.00-1.01
Sex[1]						
Abuse	0.39	<.001	82.77	.04	1.48	1.36-1.61
Neglect	0.41	<.001	93.30	.04	1.51	1.39-1.65
House. Dys.	0.39	<.001	83.46	.04	1.48	1.36-1.61
Income						
Abuse	-0.08	<.001	35.25	.01	0.93	0.91-0.95
Neglect	-0.07	<.001	34.38	.01	0.93	0.91-0.95
House. Dys.	-0.07	<.001	31.98	.01	0.93	0.91-0.96
Mil. Exp.						
Abuse	-0.11	0.13	2.26	.07	0.90	0.78-1.03
Neglect	-0.08	0.25	1.14	.07	0.92	0.80-1.06
House. Dys.	-0.09	0.22	1.53	.07	0.92	0.80-1.05
Education						
Abuse	0.00	0.83	0.05	.01	1.00	0.98-1.02
Neglect	0.00	0.48	0.49	.01	1.04	0.99-1.03
House. Dys.	0.01	0.30	1.07	.01	1.01	1.00-1.03
Par MH[2]						
Abuse	0.70	<.001	650.36	.03	2.01	1.91-2.12
Neglect	0.74	<.001	743.33	.03	2.09	1.98-2.20
House. Dys.	0.75	<.001	777.73	.03	2.13	2.02-2.24
ACE Type						
Abuse	0.28	<.001	203.24	.02	1.32	1.27-1.37
Neglect	0.34	<.001	125.15	.03	1.41	1.33-1.50
House. Dys.	0.15	<.001	50.55	.03	1.16	1.12-1.21
Struc. Sup.						
Abuse	-0.01	0.51	0.02	.02	0.99	0.95-1.03
Neglect	-0.01	0.51	0.44	.02	0.99	0.95-1.03
House. Dys.	-0.02	0.48	0.50	.02	0.99	0.95-1.03

Table 2A (cont'd)

Func. Sup.						
Abuse	-0.23	<.001	107.33	.02	0.80	0.76-0.83
Neglect	-0.23	<.001	110.86	.02	0.79	0.76-0.83
House. Dys.	-0.27	<.001	161.81	.02	0.77	0.74-0.80
SS Int.						
Abuse	-0.02	0.40	0.70	.02	0.98	0.95-1.02
Neglect	-0.01	0.88	0.03	.03	1.00	0.93-1.06
House. Dys.	-0.01	0.83	0.05	.02	1.00	0.95-1.04
FS Int.						
Abuse	-0.02	0.36	0.85	.02	0.98	0.95-1.02
Neglect	0.03	0.39	0.78	.03	1.03	0.97-1.08
House. Dys.	-0.02	0.42	0.65	.02	0.98	0.94-1.03

White Sample – PD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	<.001	123.20	.00	0.99	0.98-0.99
Neglect	0.68	<.001	296.75	.04	0.99	0.98-0.99
House. Dys.	-0.01	<.001	102.03	.00	0.99	0.98-0.99
Sex[1]						
Abuse	0.66	<.001	277.39	.04	1.93	1.78-2.08
Neglect	0.68	<.001	296.75	.04	1.97	1.82-2.12
House. Dys.	0.65	<.001	274.32	.04	1.91	1.77-2.06
Income						
Abuse	-0.06	<.001	31.16	.01	0.94	0.92-0.96
Neglect	-0.06	<.001	29.06	.01	0.94	0.92-0.96
House. Dys.	-0.06	<.001	26.57	.01	0.94	0.92-0.96
Mil. Exp.						
Abuse	0.02	.813	0.06	.07	1.02	0.89-1.16
Neglect	0.04	.514	0.43	.07	1.05	0.92-1.19
House. Dys.	0.04	.542	0.37	.07	1.04	0.91-1.19
Education						
Abuse	-0.00	.729	0.12	.01	1.00	0.98-1.01
Neglect	0.00	.849	0.04	.01	1.00	0.98-1.02
House. Dys.	0.01	.549	0.36	.01	1.01	0.99-1.02
Par MH[2]						
Abuse	0.57	<.001	477.23	.03	1.77	1.68-1.86
Neglect	0.62	<.001	192.29	.03	1.86	1.77-1.95
House. Dys.	0.64	<.001	620.19	.03	1.90	1.80-2.00

Table 2A (cont'd)

ACE Type						
Abuse	0.33	<.001	342.26	.02	1.40	1.35-1.45
Neglect	0.39	<.001	192.29	.03	1.48	1.40-1.56
House. Dys.	0.17	<.001	71.63	.02	1.18	1.14-1.23
Struc. Sup.						
Abuse	0.00	.947	0.00	.01	1.00	0.96-1.04
Neglect	0.00	.986	0.00	.02	1.00	0.96-1.04
House. Dys.	0.00	.959	0.00	.02	1.00	0.96-1.04
Func. Sup.						
Abuse	-0.15	<.001	49.41	.02	0.87	0.83-0.90
Neglect	-0.14	<.001	45.40	.02	0.87	0.83-0.91
House. Dys.	-0.18	<.001	84.47	.02	0.83	0.80-0.87
SS Int.						
Abuse	-0.02	.426	0.63	.02	0.99	0.95-1.02
Neglect	-0.05	.074	3.18	.03	0.95	0.90-1.01
House. Dys.	-0.01	.992	0.16	.02	0.99	0.95-1.03
FS Int.						
Abuse	-0.02	.372	0.80	.02	1.02	0.98-1.05
Neglect	0.04	.129	2.30	.03	1.04	0.99-1.10
House. Dys.	-0.02	.452	0.57	.02	0.99	0.95-1.03

White Sample – SAD as the Outcome

Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	-0.01	<.001	88.87	.00	0.99	0.98-0.99
Neglect	-0.01	<.001	93.06	.00	0.99	0.98-0.99
House. Dys.	-0.01	<.001	78.44	.00	0.99	0.98-0.99
Sex[1]						
Abuse	0.26	<.001	50.65	.04	1.30	1.21-1.39
Neglect	0.28	<.001	58.20	.04	1.32	1.23-1.42
House. Dys.	0.26	<.001	51.40	.04	1.30	1.31-1.40
Income						
Abuse	-0.04	<.001	15.28	.01	0.96	0.94-0.98
Neglect	-0.04	<.001	15.50	.01	0.96	0.94-0.98
House. Dys.	-0.04	<.001	13.06	.01	0.96	0.94-0.98
Mil. Exp.						
Abuse	-0.04	.528	0.40	.06	0.96	0.85-1.09
Neglect	-0.02	.798	0.07	.06	0.98	0.87-1.11
House. Dys.	-0.01	.817	0.05	.06	0.99	0.87-1.11
Education						
Abuse	-0.05	<.001	37.41	.01	0.95	0.94-0.97
Neglect	-0.05	<.001	97.55	.01	0.95	1.01-1.03
House. Dys.	-0.05	<.001	29.92	.01	0.96	0.94-0.97

Table 2A (cont'd)

Par MH[2]						
Abuse	0.49	<.001	377.63	.03	1.27	1.23-1.32
Neglect	0.53	<.001	452.32	.03	1.71	1.62-1.79
House. Dys.	0.56	<.001	486.43	.03	1.74	1.66-1.83
ACE Type						
Abuse	0.24	<.001	195.15	.02	1.27	1.23-1.32
Neglect	0.27	<.001	97.55	.03	1.31	1.24-1.38
House. Dys.	0.10	<.001	26.72	.02	1.10	1.06-1.15
Struc. Sup.						
Abuse	-0.07	<.001	14.67	.02	0.93	0.90-0.97
Neglect	-0.07	<.001	13.91	.02	0.94	0.90-0.97
House. Dys.	-0.07	<.001	14.87	.02	0.93	0.90-0.97
Func. Sup.						
Abuse	-0.26	<.001	181.30	.02	0.77	0.74-0.80
Neglect	-0.26	<.001	180.41	.02	0.77	0.74-0.80
House. Dys.	-0.29	<.001	237.94	.02	0.75	0.72-0.78
SS Int.						
Abuse	0.00	.867	0.03	.02	1.00	0.97-1.04
Neglect	0.01	.695	0.15	.03	1.01	0.96-1.07
House. Dys.	-0.03	.152	2.06	.02	0.97	0.93-1.01
FS Int.						
Abuse	-0.02	.247	1.34	.02	0.98	0.95-1.01
Neglect	0.01	.591	0.29	.03	1.01	0.96-1.07
House. Dys.	-0.02	.228	1.45	.02	0.98	0.94-1.02
White Sample – Depression as the Outcome						
Variables	**B**	**P**	**Wald**	**SE**	**OR**	**95% CI Lo-Up**
Age						
Abuse	0.00	.005	7.82	.00	1.00	0.99-1.00
Neglect	0.00	.006	7.56	.00	1.00	0.99-1.00
House. Dys.	0.00	.083	3.01	.04	1.00	0.99-1.00
Sex (F)[1]						
Abuse	0.61	<.001	266.87	.04	1.84	1.71-1.98
Neglect	0.62	<.001	281.01	.04	1.86	1.73-2.00
House. Dys.	0.59	<.001	259.59	.04	1.81	1.68-1.95
Income						
Abuse	-0.08	<.001	47.28	.01	0.93	0.91-0.95
Neglect	-0.07	<.001	44.13	.06	0.93	0.91-0.95
House. Dys.	-0.07	<.001	41.92	.01	0.93	0.91-0.95

Table 2A (cont'd)

Mil. Exp.						
Abuse	-1.00	.002	9.61	.01	0.82	0.73-0.93
Neglect	-0.17	.008	6.99	.06	0.85	0.75-0.96
House. Dys.	-0.17	.008	7.01	.06	0.85	0.75-0.96
Education						
Abuse	0.02	.004	8.39	.01	1.03	1.01-1.04
Neglect	0.03	<.001	11.97	.01	1.03	1.01-1.05
House. Dys.	0.03	<.001	14.27	.01	1.03	1.02-1.05
Par MH[2]						
Abuse	0.34	<.001	1269.74	.03	2.52	2.40-2.65
Neglect	0.98	<.001	1442.84	.03	2.65	2.52-2.79
House. Dys.	0.99	<.001	1447.00	.03	2.69	2.55-2.83
ACE Type						
Abuse	0.34	<.001	382.26	.02	1.41	1.36-1.46
Neglect	0.38	<.001	194.26	.03	1.46	1.39-1.54
House. Dys.	0.15	<.001	58.71	.02	1.16	1.12-1.21
Struc. Sup.						
Abuse	-0.02	.211	1.56	.02	0.98	0.94-1.01
Neglect	-0.02	.261	1.26	.02	0.98	0.95-1.02
House. Dys.	-0.02	.299	1.08	.02	0.98	0.95-1.02
Func. Sup.						
Abuse	-0.27	<.001	192.00	.02	0.76	0.73-0.79
Neglect	-0.27	<.001	183.12	.02	0.76	0.74-0.80
House. Dys.	-0.31	<.001	262.59	.02	0.73	0.71-0.76
SS Int.						
Abuse	0.01	.434	0.61	.02	1.01	0.98-1.05
Neglect	-0.01	.847	.037	.03	1.00	0.94-1.05
House. Dys.	0.02	.251	1.32	.02	1.02	0.98-1.07
FS Int.						
Abuse	-0.02	.314	1.01	.02	0.98	0.95-1.02
Neglect	0.02	.428	0.63	.03	1.02	0.97-1.08
House. Dys.	-0.03	.225	1.47	.02	0.98	0.94-1.02

Note:

House Dys = Household Dysfunction

[1] F = F= Female

[2]Mil. Exp. Represents participants having any history of participation in the military.

[3]Par MH = Parent Mental Health

[4]SS Int. Represents the interaction between structural support and each ACE.

[5]FS Int. Represents the interaction between functional support and each ACE.