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The Relationship Between Childhood Adversity and Adult Attitudes Toward Professional Help-seeking

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Adult Attitudes Toward Professional Help-seeking

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A STUDY OF THE RELATIONSHIP BETWEEN

CHILDHOOD ADVERSITY

AND ADULT ATTITUDES TOWARD PROFESSIONAL HELP-SEEKING

DISSERTATION

by

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2018

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Donde haya un árbol que plantar, plántalo tú,
donde haya un error que enmendar, enmiéndalo tú.
Sé el que apartó la piedra del campo,
el odio entre los corazones,
y las dificultades del problema.
Hay la alegría de ser sano y de ser justo,
pero hay, sobre todo, la hermosa,
la inmensa alegría de servir.

–Gabriela Mistral

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Abstract

The purpose of this study was to explore the relationship between adverse childhood experiences (ACEs) and adult attitudes toward professional help-seeking for emotional problems through a secondary data analysis of the National Comorbidity Survey—Replication (NCS-R), a nationally representative U.S. sample (n = 5,692). Personal attitudes toward seeking mental health treatment drive health behavior and service utilization. Although treatment can be effective in treating psychiatric symptoms and ameliorating emotional distress, access to treatment requires the individual is willing to seek professional help. However, ACE exposure has been shown to impair processes associated with help-seeking, such as socialization, emotional regulation and impulse control. This study found higher ACE scores had a significant inverse association with intention to seek professional help. Higher ACE scores also had a significant inverse association with feeling comfortable talking to a professional about personal problems. Participants with four or more ACE also had significantly higher proportions of past suicidal behavior, depression, anxiety, bipolar and substance use disorders compared to participants with no ACE exposure. In hierarchical logistic regression modeling, the presence of three or more ACE, male gender, past suicidal behavior, and anxiety disorders all emerged as significant predictors of negative attitudes toward seeking professional help. Better understanding of the links between early adversity and attitudes toward professional help-seeking will help improve trauma-informed social work practice and may improve access to behavioral health treatment. Implications for social work practice and policy are discussed.

Keywords: childhood adversity, help-seeking, secondary data analysis, National

Comorbidity Survey-Replication (NCS-R)

Chapter 1

Introduction

Exposure to childhood adversity (CA) is associated with morbidity and mortality across the lifespan (Gilbert et al., 2009). Research has shown a correlation between childhood exposure to adverse experiences and mental and physical disease in adulthood (Colman et al., 2014; Danese, Pariante, Caspi, Taylor, & Poulton, 2007; Larson & Halfon, 2013; Pearlin, Schieman, Fazio, & Meersman, 2005). In particular, there is a strong correlation between exposure to CA and mental health problems, such as depression, in adulthood (Chapman et al., 2004; Mersky, Topitzes, & Reynolds, 2013; van Nierop et al., 2015). Emotional problems can be disabling and when they result in mental health and substance use disorders, they are associated with economic loss and increased morbidity across the lifespan (Greenberg, Pike, & Kessler, 2015; Moussavi et al., 2007; Whiteford et al., 2013).

Behavioral health disorders can be treated and early intervention is correlated with improved functioning (Patel et al., 2016, 2017; Trangle et al., 2016). Yet, research shows that in the United States, only 35.4% of people initiate treatment within the first year of mood disorder symptom onset, and the median delay before seeking treatment is four years (Wang et al., 2007). Globally, 50-70% of people with major depressive disorder remain untreated and those who receive treatment delay eight years before seeking treatment (Kohn, Saxena, Levav, & Saraceno, 2004; Wang et al., 2005).

Research suggests CA, while increasing the person's vulnerability to developing mental health disorders in adulthood, may also impair positive coping behaviors such as help seeking for mental health symptoms (Bellis et al., 2014; Kaufman, Plotsky,

Nemeroff, & Charney, 2000; Teicher et al., 2003). Since help-seeking is an effective

coping response to health threats (both physical and psychological), the study of the

effect of CA on adult attitudes toward professional help-seeking may provide valuable

information on how to improve access to treatment for this vulnerable population

(Mojtabai, Olfson, & Mechanic, 2002; Rickwood & Thomas, 2012; Scott, Walter,

Webster, Sutton, & Emery, 2013). The purpose of this study was to examine the

relationship between exposure to CA and adult attitudes toward seeking professional help

for emotional problems.

Background

This study used a Life Course Health Development (LCHD) framework (Cheng

& Solomon, 2014; Colman et al., 2014; Padgett, Smith, Henwood, & Tiderington, 2012)

to view the connection between exposure to CA and help-seeking for emotional problems

in adulthood. The role of help-seeking as a protective factor and pathway to treatment

was also viewed from an LCHD perspective. LCHD stresses a longitudinal approach to

weighing the impact of biological, psychological and environmental risk and protective

factors on disease and health trajectories (Halfon, Larson, Lu, Tullis, & Russ, 2014; Kuh,

Ben-Shlomo, Lynch, Hallqvist, & Power, 2003). LCHD integrates systems biology,

genomics and epigenetics with public health and medicine (Halfon et al., 2014). The

result is a framework that considers how environmental exposures affect biopsychosocial

development across the lifespan (Kuh et al., 2003). Using this theoretical approach, this

proposed study will examine the potential mediating effect of exposure to CA on

intentions to seek help for depressive symptoms in adulthood.

Childhood and adolescence are sensitive phases in the life course—when the negative impact of child maltreatment and trauma can have a lasting effect on future health development (Larson & Halfon, 2013). Research on the longitudinal effects of exposure to CA operationalize it in various ways: from a narrow focus on a specific type of abuse (e.g. sexual or physical abuse) to a broader range of traumatic experiences (e.g. loss of a parent, domestic violence, parental mental illness, and economic adversity) (Kalmakis & Chandler, 2014). For clarification, this proposed study will use the broader definition of CA which encompasses abuse, maltreatment, neglect and exposure to household dysfunction such as domestic violence, separation from or loss of parents, and parental mental illness, substance abuse and criminality (Anda, Butchart, Felitti, & Brown, 2010; Kessler et al., 2010). The terms "childhood maltreatment," "childhood adversity (CA)," "adverse childhood experiences (ACE)," and "childhood trauma" will be used in this proposal to refer to childhood exposure to loss, maltreatment and maladaptive family functioning. A more extensive discussion of the conceptualization of adverse childhood experiences is covered in the literature review section of this paper.

The connection between childhood exposure to adverse experiences and risk factors for morbidity and mortality in adulthood has been widely studied (Dube, Felitti, Dong, Giles, & Anda, 2003; Felitti et al., 1998; Heim, Shugart, Craighead, & Nemeroff, 2010). The Centers for Disease Control and Prevention's (CDC) Adverse Childhood Experiences (ACE) studies were seminal in discovering a correlation between childhood abuse and/or environmental dysfunction and the presence of adult health problems such as depression, alcohol abuse, heart disease, obesity, cancer and other diseases (Chapman et al., 2004; Dube et al., 2005; Dube, Anda, Felitti, Edwards, & Croft, 2002; Dube,

Felitti, Dong, Giles, & Anda, 2003; Felitti et al., 1998). Since then, a number of studies

have confirmed adverse experiences in childhood impact biological systems, cognitive

development and metabolic functioning (Danese et al., 2007; English et al., 2005; Fox,

Levitt, & Nelson, 2010; Heim, Newport, Mletzko, Miller, & Nemeroff, 2008; Kaufman et

al., 2000; Widom, Horan, & Brzustowicz, 2015).

Aside from its effect on physical health and disease, studies have also shown a

significant correlation between CA and mental health problems in adulthood (Anda et al.,

2002; Nanni, Uher, & Danese, 2012). Exposure to adverse childhood experiences affects

neurodevelopmental functioning thereby altering neuronal patterns related to stress

response, and cognitive, emotional and social functioning with implications throughout

the lifespan (Perry, 2009). As a consequence, traumatic early childhood experiences

increase the risk of developing psychopathology in adulthood, such as mood, behavior

and anxiety disorders (Rincon-Cortes & Sullivan, 2014).

A variety of studies have found a link between childhood maltreatment and

behavioral health disorders in adulthood (Danese et al., 2009; Heim et al., 2008; van Dam

et al., 2015). Exposure to childhood adversity may worsen the prognosis for psychiatric

disorders. For example, studies show compared to depressed adults with no history of

childhood maltreatment, depressed adults with a history of childhood trauma have an

increased risk of suicide attempts (Erol, Ersoy, & Mete, 2013); have earlier symptom

onset (Kessler et al., 2010); and have increased severity and chronicity of depressive

episodes throughout their lifetime (Mersky et al., 2013). However, treatment for

behavioral health disorders can be effective and early intervention can improve the course

of illness, duration and severity (Sperry & Widom, 2013; van Nierop et al., 2015;

Williams, 2006).

From a life course perspective, professional mental health treatment is associated

with improved quality of life, increased life expectancy and improved psychosocial

functioning (Chisholm et al., 2016). There is wide supporting evidence that early

intervention for behavioral health disorders improves functional and treatment outcomes

across the lifespan (Kessler et al., 2001; McGorry, Purcell, Goldstone, & Amminger,

2011). However, the low rates of behavioral health treatment utilization hinder early

intervention efforts (Rickwood, Deane, & Wilson, 2007). Population based studies in the

United States show only 35% of people with clinically significant symptoms of

depression access treatment within the first year of symptom onset (Wang et al., 2007). A

review of published data from community-based epidemiological studies found that

globally, 56.3% of people with clinically significant symptoms of depression remain

untreated (Kohn et al., 2004). The consequences for delaying treatment for behavioral

health conditions include increased severity and chronicity of mental health, substance

use, and increased morbidity and mortality across the lifespan (Moussavi et al., 2007;

Wang et al., 2007).

Help-seeking is a concept derived from the study of illness behavior and how

people access medical treatment (Mechanic, 2002; Sirri, Fava, & Sonino, 2013). Help-

seeking is considered an effective coping skill, a decisional process and a critical stage in

the pathway to treatment (Rickwood & Thomas, 2012; Scott et al., 2013). Yet, because

help-seeking is a dynamic and complex process, it is important to study factors that may

influence professional help-seeking intentions, particularly for populations who are

vulnerable and are exhibiting symptoms. Adverse childhood experiences and their impact on affective and social development may make a person both more susceptible to developing psychiatric disorders in adulthood and less likely to seek help.

Statement of Potential Significance

Trauma informed practice is a key feature of effective social work interventions, so it is important for social workers consider the impact of trauma on pathways to care and treatment (Knight, 2015; Levenson, 2017; Levenson, Willis, & Vicencio, 2017). Trauma informed care provides the practice framework for understanding the prevalence of early adversity in various service populations, the psychosocial impact of trauma across the lifespan, and the importance of responding to clients in ways that do not repeat traumatizing (e.g. oppressive or disempowering) dynamics in the helping relationship (Knight, 2015; Oral et al., 2016; Rosenberg, 2011). From a social work perspective, increasing the knowledge base on how to facilitate access to mental health care for depressed individuals may serve to reduce the negative impact of childhood trauma.

Thus, there is a need for research into the impact of CA on attitudes toward professional help-seeking in adulthood to inform mental health policy and practice. By researching the impact of childhood stress and adversity on mental health help-seeking intentions, we can develop trauma-informed policies and service delivery modes. Improved pathways to mental health services may lead to improved early mental illness detection efforts, early intervention and improved overall outcomes across the lifespan. Though the relationship between exposure to CA and adult psychopathology has been widely studied (Danese et al., 2009; Hammen, Henry, & Daley, 2000; Heim et al., 2008; S. W. Kim et al., 2013; Korkeila et al., 2005; Lara, Klein, & Kasch, 2000; Nanni et al.,

2012), there is less research on how that exposure affects help-seeking (Leitenberg,

Gibson, & Novy, 2004; Sabina, Cuevas, & Schally, 2012a; Stige, Træen, & Rosenvinge,

2013; Willis et al., 2014), and there are no studies on the relationship between CA and

adults' attitudes toward seeking professional help. Therefore, the goal of this study was to

fill the gap in the literature by exploring the impact, if any, of CA on attitudes toward

professional help-seeking among adults. Next is a review of the relevant literature,

starting with a discussion of the theoretical framework that underpins this study.

Chapter 2: Literature Review

Theoretical Framework

Life Course Health Development. The Life Course Health Development

(LCHD) framework was developed to explain how health and disease trajectories

develop over an individual's lifetime (Halfon & Hochstein, 2002). LCHD is a theoretical

framework with practical clinical and research applications, integrating genomics,

biology, sociology and epidemiology to understand the social and environmental contexts

for health and disease (Halfon et al., 2014; Kuh et al., 2003). For example, a cohort study

(n=1132) linked childhood socioeconomic status (SES) to risk for depression in

adulthood (Gilman, Kawachi, Fitzmaurice, & Buka, 2002). The sample was population-

based and not selected for the presence of a psychiatric condition. The study found lower

SES in childhood was associated with a significant increase in the risk to develop

depression in adulthood, even when controlling for demographic factors, parental mental

illness and adult SES. The authors conclude that social disparities in depression originate

early in the life course and a developmental perspective provides an optimal framework

to study these disparities (Gilman et al., 2002).

The LCHD framework calls for a longitudinal approach that seeks to optimize the

factors that result in healthier trajetories and minimize developmental risk factors that

result in disease process (Halfon & Hochstein, 2002). LCHD posits two possible

mechanisms to explain the association with early CA and disease in adulthood: 1) an

indirect path-dependent mechanism defined by links of age-graded environmental risks

and protective factors that compound over the life course; and 2) a direct exposure-

dependent mechanism where the exposure to childhood stress and adversity creates

neurodevelopmental changes that increase risk for physical and psychological disease in adulthood (Gilman & McCormick, 2010; Wickrama, Noh, & Elder, 2009). These developmental cascades (Masten & Cicchetti, 2010) originate from the myriad of transactions and interactions in a developing system, have a spreading effect across functional domains over time (p. 491). For example, traumatic experiences in early childhood may alter the stress response system and gene expression, which in turn, can alter functioning—this creates a negative developmental cascade in brain development, stress reactivity, and socio-emotional functioning which can have widening effects on mental health over the person's lifetime (Lupien, McEwen, Gunnar, & Heim, 2009; Masten & Cicchetti, 2010; McEwen, 2003).

Developmental cascade models are best tested through longitudinal data (Masten & Cicchetti, 2010). Colman et al.'s (2014) British birth cohort study found evidence of developmental cascades linking early stress exposure to adult depression. The National Survey of Health and Development (n=4627) longitudinally examined the direct and indirect effects of birthweight, age of developemental milestones, economic deprivation in early childhood, acute stress in childhood and adulthood, and socioeconomic status in adulthood on depression in adolescence and adulthood (Colman et al., 2014). The study found a direct association between adult depression and 1) separation from mother in childhood and 2) parental divorce. Moreover, the study found economic deprivation in childhood was indirectly associated with adult depression. The authors posit economic deprivation in childhood was associated with cummulative childhood stress and increased likelihood of parental divorce (Colman et al., 2014). This study shows the connection between CA and adult depression, and demonstrates the potential mechanisms of

association between the two. The study also supports the usefulness of the LCHD

framework to understand how the social and physical environment shape vulnerability to

behavioral health disorders across the life span.

LCHD is a crucial perspective to identify potential high risk populations and

understanding how social determinants of health develop disease pathways that begin

early in life and extend through the course of human development (Gilman &

McCormick, 2010). Of relevance to this research proposal, LCHD provides a framework

to study how exposure to adversity in childhood may account for social inequalities in

adult health and mortality (Kuh et al., 2003). Moreover, as LCHD posits a synergy

between social and biomedical risk and protective factors, it also underlies the need to

study how protective factors such as the willingness to seek help and access treatment

may reduce the detrimental effects of early childhood stress and adversity (Gilman &

McCormick, 2010; Halfon & Hochstein, 2002). Interventions provided at critical

developmental periods may serve to disrupt negative cascades or promote positive

cascades by disrupting problem domains before they cascade into further problems, or by

increasing competence in domains to create increasing improvements in biosocial

functioning (Burt, Obradovic, Long, & Masten, 2008; Gunnar & Cheatham, 2003;

Masten et al., 2004; Masten & Cicchetti, 2010). In other words, the interplay between

risk and protective factors' effects during developmentally sensitive time frames

underscores how early intervention can optimize health outcomes across the lifespan

(Halfon & Hochstein, 2002; Kuh et al., 2003). This study posits CA as a risk factor for

mental health disorders in adulthood and help-seeking as a protective factor.

Population based studies have shown a clear association between childhood exposure to trauma and adverse experiences and mental health disorders in adulthood. First, childhood adversities are common, occurring consistently in over 50% of the population in multiple studies. For example, the NCS-R (subsample, n=5,692) used a nationally representative US sample to examine the prevalence of exposure to CA (interpersonal loss, parental maladjustment, maltreatment, extreme economic adversity and life-threatening childhood physical illness). Findings included a 53.4% prevalence of at least one CA, with a significant association between exposure and risk for onset for mood, anxiety and substance use disorders (Green et al., 2010). A review of childhood adversities in the World Health Organization World mental health surveys (Kessler et al., 2010) noted childhood adversities account for 29.8% of all mood, anxiety, behavior and substance use disorders worldwide. However, treatment and early intervention is associated with improved mental health outcomes, and help-seeking is a potential protective factor because it improves access to treatment.

Considering the established link between childhood trauma and pscyhopathology in adulthood, the LCHD model supports research on improving pathways to mental health treatment. From an LCHD framework, help-seeking is a protective factor that may yield improved health outcomes later on in life (Halfon et al., 2014). Help-seeking has been identified as central construct in prevention and early intervention for serious mental illness as it facilitates access to treatment (Dell'Osso, Glick, Baldwin, & Altamura, 2013; Patel, Flisher, Hetrick, & McGorry, 2007; Wilson, Bushnell, & Caputi, 2011). Studying help-seeking from a social work perspective can provide valuable information on how the interaction between the individual help-seeking process and the social environment is

affected by trauma exposure (Schreiber, Maercker, & Renneberg, 2010; Skinner, Edge, Altman, & Sherwood, 2003; Strand, Abramovitz, Layne, Robinson, & Way, 2014). Help-seeking is critical to all aspects of social work practice contexts—from policy development, to studying the impact of social and health networks, and as a precursor to client identification, outreach and service delivery (Finn & Jacobson, 2003; Page, 2017; Simmons, 2012; Vourlekis & Greene, 2017). This present study centers on examining how exposure to CA impacts adults' attitudes toward seeking professional help. The following literature review section will present the exisiting literature on this topic, starting with a description of the primary study concepts.

Primary Study Concepts: Childhood Adversity and Help-Seeking

There is limited research on how childhood trauma and adversity impact help-seeking behavior and thereby affect access to mental health treatment among adults. This exploratory study examines the relationship between exposure to adverse childhood experiences and help-seeking intentions for depression. The following sections detail each of these concepts.

Childhood Adversity

Childhood adversity (CA) includes child abuse, neglect and maltreatment, as well as childhood exposure to distressing and harmful experiences that occur within the context of the family and social-environment (Kalmakis & Chandler, 2014). Family dynamics such as substance abuse, domestic violence and criminal behavior, often co-occur with direct forms of child maltreatment and neglect (Felitti et al., 1998). Risky family environments marked by conflict, aggression and emotional neglect have been shown to increase risk for child abuse and negatively affect child development (Repetti,

Taylor, & Seeman, 2002; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Spinhoven et al., 2010). Family sources of CA include physical, sexual and emotional abuse, as well as witnessing domestic violence, parental drug abuse, mental illness, incarceration, separation/divorce, and child separation from the family (Felitti et al., 1998; Kalmakis & Chandler, 2014). Socio-environmental sources of CA include poverty, low socio-economic status, racial segregation, community violence, school violence and bullying, and natural disasters (Cronholm et al., 2015; Geronimus, Hicken, Keene, & Bound, 2006; Kalmakis & Chandler, 2014; Lereya, Copeland, Costello, & Wolke, 2015; Poulton et al., 2002).

Adverse childhood experiences are noted to be harmful, chronic, distressing to the child, cumulative, and varying in severity (Kalmakis & Chandler, 2014). Felitti et al.'s (1998) landmark study— "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study" —operationalized adverse childhood experiences as exposure to child abuse (emotional, physical, and sexual), and household dysfunction (parental substance abuse, mental illness in the household, criminal behavior in the household, and intimate partner violence against the mother). The CDC ACE study was one of the first to highlight the cumulative feature of adverse childhood experiences, and to link CA with negative developmental cascades resulting in morbidity and mortality in adulthood. The original CDC ACE study also showed a high prevalence of CA among the study population: 64% of respondents experienced at least one ACE and 12.5% experienced 4 or more ACEs. In the abuse category, physical abuse was most prevalent (28.3%), followed by sexual abuse (20.7%), and emotional abuse (10.6%). In the household

dysfunction category, parental substance abuse was most common (26.9%), followed by

parental separation (23.3%), household mental illness (19.4%), violence against mother

(or stepmother) (12.7%), and incarcerated household member (4.7%) (Felitti et al., 1998).

Prevalence. The high prevalence of CA found in Felitti et al. (1998) may be a

global phenomenon. An analysis of the global prevalence of CA through the World

Health Organization Mental Health Surveys (Kessler et al., 2010) found prevalence rates

consistent with the original CDC ACE Study (Felitti et al.,1998). Kessler et al.'s (2010)

study measured adversity in the following categories: interpersonal loss (death of parent,

parental divorce/separation), parental maladjustment (parental mental illness, substance

disorder, criminal behavior and family violence), maltreatment, and other childhood

adversities (physical illness and economic adversity). The rate of exposure to at least one

adversity in high-income countries was 59.3% (with 9.2% experiencing four or more

ACEs), in high-middle-income countries the rate was 59.6% (with 6.8% reporting four or

more ACEs), and the CA prevalence rate was higher in low-/lower-middle-income

countries (66.2% experienced at least one ACE, 5.5% reported four or more) (Kessler et

al., 2010).

Other studies have shown a higher prevalence of CA exposure among lower

income populations. Using the same ACE categories in Felitti et al.'s (1998) CDC ACE

study, a study in a developing country found 75% percent of respondents had at least one

ACE and 9% had four or more (Ramiro, Madrid, & Brown, 2010). Another study using

the ACE study definition of adversity with a pediatric population from a low

socioeconomic, racially and ethnically diverse urban community in San Francisco found

a 67.2% prevalence of CA exposure, with 12% experiencing four or more (Burke,

Hellman, Scott, Weems, & Carrion, 2011). Finally, a study with a population of

reservation-based Native American adolescents and young adults found 78.1% of

respondents had experienced at least one ACE, while 22.5% had experienced at four or

more (Brockie, Dana-Sacco, Wallen, Wilcox, & Campbell, 2015).

These higher prevalence rates are consistent with findings from a nationally

representative sample from the National Comorbidity Survey (NCS) (Kessler, Davis, &

Kendler, 1997), which found 74.4% of respondents experienced at least one adverse

childhood experience, and 35% were exposed to three or more. The National

Comorbidity Survey was conducted between 1990-1992, and used 26 different categories

of CA, including loss events (death of parent, parental divorce/separation), parental

psychopathology (serious mental illness and substance use disorders), interpersonal

trauma (sexual molestation, physical abuse, aggression toward parent) and other

adversities (accidents, natural disasters). The National Comorbidity Survey—Replication

(NCS-R) was conducted from 2001-2003 and like the NCS, also found high CA

prevalence among a nationally representative US sample (Green et al., 2010). The NCS-

R found approximately 53.4% of respondents reported having at least one CA. The most

common were parental divorce (17.5%), family violence (14.0%), family economic

adversity (10.6%), and parental mental illness (10.3%). Findings from the NCS-R also

showed the multiple adversities were the norm in the study, with certain adversities

increasing the likelihood of cumulative exposure to CA. For example, children raised in

risky family environments, marked by abuse, neglect, parental substance abuse, mental

illness, criminality and domestic violence were more likely to have multiple CAs (Green

et al., 2010). In these maladaptive family environments, CAs were cumulative: 85.5% of

respondents exposed parental substance abuse had more than one adversity; 95.1% of

respondents who experienced neglect had more than one adversity (Green et al., 2010).

Another study with a nationally representative sample, the Developmental

Victimization Survey, measures the one-year incidence of childhood victimization

(Finkelhor, Ormrod, Turner, & Hamby, 2005). The study uses a comprehensive range of

victimization exposures, including physical assault, sexual victimization, maltreatment,

property victimization, and indirect exposure to victimization (such as witnessing an

assault, domestic violence, or violence in the community). The study found rates of CA

exposure similar to the rates found in the National Comorbidity Survey (Kessler et al.,

1997): 71% of children and youth in the Developmental Victimization Survey were

exposed to at least one direct or indirect victimization over the course of one year

(Finkelhor et al., 2005). As with the NCS-R results, children who were exposed to one

victimizing event had a 69% chance of experiencing a second event, 49% of children and

youth were exposed to two or more victimizations, and the mean number of

victimizations in a one year period was three (Finkelhor et al. 2005).

A cumulative effect. This cumulative effect of CA is consistent throughout the

literature. The CDC ACE study also found support for the cumulative effect of CA—a

mean 80% of people exposed to one category of abuse were exposed to a second

category. The percentage range was from 65% (sexual abuse) to 93% (psychological

abuse). Alternately, 93% of people exposed to psychological abuse were also exposed to

a second category of abuse, and 74% were exposed to any two additional categories

(Felitti et al., 1998). A recent study with a nationally representative sample of adults (n =

34,653) found a 10.14% rate of exposure to childhood sexual abuse among the general

population (Pérez-Fuentes et al., 2013). The study also found that adults who were

sexually abused as children were also over four times more likely to have grown up with

a mentally ill parent, and to have been exposed to physical abuse and neglect as children

than adults without childhood sexual abuse histories. Adverse childhood experiences

tend to be interrelated rather than occurring independently: the presence of one ACE

significantly increased the likelihood of additional adverse experiences (Dong et al.,

2004).

This finding has been supported in a population-based (n=9,953) study by

Chartier, Walker and Naimark (2009), which showed childhood abuse and exposure to

adverse experience as "overlapping risk factors" for a variety of health outcomes. In their

study, 72% of respondents had at least one CA, while more than one-third (37%) had two

or more. These figures correlate with the original CDC ACE study, where 64%% of the

participants had at least one CA and 12.5% had four or more (Anda et al., 2006; Felitti et

al., 1998). Thus, the presence of multiple adverse experiences suggest the individual has

grown up in a disordered or chaotic social environment with adults who were ill equipped

to nurture them or protect them from harm (Costello, Erkanli, Fairbank, & Angold, 2002;

Nurius, Logan-Greene, & Green, 2012).

Childhood adversities are prevalent, interrelated and associated with a wide-range

of physical and mental disorders across the lifespan (Green et al., 2010; Kessler et al.,

2010; Shonkoff, Garner, Siegel, Dobbins, Earls, Garner, et al., 2012). For example, the

National Comorbidity Survey, showed a correlation between childhood adversities and

the onset of clinically significant psychiatric disorders (Kessler et al., 1997). Moreover,

the survey showed a clustering of adversities, indicating a more comprehensive

assessment of adversities is preferable to studies that focus on one or a limited number of

adversities (Kessler et al., 1997). Since then, a series of studies have examined the

relationship between a broad assortment of adverse experiences in childhood and health

risk factors in adulthood (Anda et al., 2002; Chapman et al., 2004; Chartier, Walker, &

Naimark, 2010; Dube, Cook, & Edwards, 2010; Felitti et al., 1998). In these studies, CA

is comprised of exposure to childhood abuse (psychological, physical or sexual) and/or

household dysfunction in childhood (parental substance abuse, mental illness, physical

aggression against mother and criminal behavior). In subsequent studies, the correlation

between exposure to childhood trauma and adversity and adult mental health, substance

abuse and mortality risk factors has been widely researched (Batcho, Nave & Darin,

2011; Chartier, Walker, & Naimark, 2010; Kelly-Irving, Mabile, Grosclaude, Lang, &

Delpierre, 2013; Mersky, et al., 2013). These studies all share two important factors: 1) a

lifespan framework for the effect of childhood stress and adversity; and 2) a broad

definition of CA rather than a narrow focus on a specific type trauma experience. This

broader conceptualization allows for researchers to approach CA from a both a public

health and developmental perspective. This, in turn, creates a wider framework to analyze

the long-term developmental consequences of childhood stress and trauma (Halfon &

Hochstein, 2002; Kalmakis & Chandler, 2014; Larkin, Felitti, & Anda, 2014).

Childhood Adversity, the Life Course, and the Person-in-Environment

perspective. The social work profession views human behavior from a person-in-

environment perspective, by which psychological factors interact in a reciprocal way with

environmental and social factors (Fraser, 2004; Simmons, 2012). The person-in-

environment perspective is a central tenet of social work practice and is rooted in the

historical mission of the profession (Cornell, 2006). Person-in-environment is an

ecological framework that posits children's biosocial development is shaped through

continuous, reciprocal transactions with the environment, and therefore allows for the

framing of the enduring influence of CA through a social work lens (Fraser, 2004;

Pollock, 2013). The person-in-environment model influenced the original research on

attachment theory (Chinnery, 2016), and provides a holistic approach to assessing and

intervening in individual and social problems (Maynard, Boutwell, & Vaughn, 2016). As

both biology and the environment are critical to shaping human development and

behavior across the lifespan, social work researchers have called for further integration of

the biosocial perspective into the person-in-environment model (Maynard et al., 2016).

Integration of knowledge of the biosocial factors that influence development and increase

risk of future disorders is key to facilitating improved social work prevention and

intervention methods, and can provide a "more nuanced and more accurate understanding

of individual and social problems" (Maynard et al., 2016, p. 6). This paper follows that

approach, integrating biosocial influences and neurobiology with the person-in-

environment perspective that is central to social work practice to explore the social and

behavioral effects of CA on depression and help-seeking.

　　　　Social research shows CA originates from structural factors (e.g. poverty, family

dynamics, housing, community violence) instead of as a random occurrence (Fraser,

2004; Schilling, Aseltine, & Gore, 2008). From a developmental framework, research

suggests a significant relationship between cumulative exposure to CA and physical and

mental disease in adulthood (Dube et al., 2001; Kessler et al., 1997; Sperry & Widom,

2013; van Nierop et al., 2015). However, the association may be attributed to either direct

or indirect mechanisms: either the direct impact of exposure to adversity on biological

maturation processes (Heim et al., 2010; Lupien et al., 2009; E. F. Walker, Sabuwalla, &

Huot, 2004) or indirectly through a cumulative effect of adverse experiences in childhood

which correlate with the clustering of increased stress and adversity as the person matures

(Atkinson et al., 2015; Ensel & Lin, 1991; H. A. Turner & Turner, 2005). The following

sections provide details on the supporting literature on the phenomenon.

     Childhood adversity and the disease trajectory. LCDH frames childhood

maltreatment as a risk factor for future morbidity and mental illness (Atkinson et al.,

2015; Widom et al., 2015). This effect may through a direct pathway of stress mediated

alterations in neurobiological development (Anda et al., 2006; Heim et al., 2010; Teicher

et al., 2003); or indirectly through limited access to resources, and increased vulnerability

to stress and additional adverse experiences as the person ages (Arpawong et al., 2014;

Atkinson et al., 2015; R. J. Turner & Avison, 2003). Aside from the physiological impact

of CA, other studies have linked it to cummulative stress experiences in adulthood

(Pearlin et al., 2005; Turner & Turner, 2005). Cummulative stress, in turn, has long-

reaching effects in psychological and physiological development. Regardless of the

mechanism, early chilhood adversity increases vulnerability to physical and

psychological disease throughout the life course (Pearlin et al., 2005).

     The original CDC ACE study established a link between exposure to adverse

childhood experiences such as abuse and household dysfunction, and risk factors for

morbidity and mortality in adulthood (Felitti et al., 1998). Based on a retrospective

analysis, the ACE Study showed a graded relationship between CA and diseases in

adulthood—ischemic heart disease, cancer, and chronic lung disease, among others

(Felitti et al., 1998). Later studies confirmed a positive relationship between CA and

health problems (Dube, Felitti, Dong, Giles, & Anda, 2003), and mental health problems

in adulthood (Chapman et al., 2004; Dube et al., 2005, 2006, 2002).

Recently, a cohort study in Ireland (n=2,047) using similar methodology to the

CDC ACE study also found a relationship between CA and chronic disease

multimorbidity (Sinnott, Mc Hugh, Fitzgerald, Bradley, & Kearney, 2015). The study

found participants with exposure to adverse childhood experiences were more likely (OR

1.6) to have multiple chronic diseases such as hypertension, diabetes, depression,

osteoarthritis, thyroid disease, than participants without such exposure. The authors note

the association between childhood trauma and the number of chronic illnesses in

adulthood remained signficant after controling for social (e.g. educational level),

behavioral (e.g. smoking, diet, exercise), and psychological factors (depression and

anxiety scores (Sinnott, et al., 2015).

Another recent cross-sectional study (n=19,333) using data from the CDC's

Behavior Risk Factor Surveillance System (BRFSS) found a dose-related effect of CA on

both physical and mental health (Logan-Greene, Green, Nurius, & Longhi, 2014). Like

Sinnott, et al. (2015) study, Logan-Greene et al.'s (2014) study used the same ACE

questionnaire used in the original ACE study. The data analysis controlled for

demographic factors and SES. The study found higher ACE scores were associated with

poorer mental health and more poor health days across all age groups. However, the

detrimental impact of adverse childhood experiences on daily life functioning showed

age-related differences: younger respondents (18-35 years old) endorsed increased

numbers of poor mental health days, and older respondents (65-79 years old) endorsed

increased numbers of poor physical health days (Logan-Greene et al., 2014). What these

studies show is, from an LCHD perspective, although SES has been linked with

depression and other health disparities, childhood trauma can have a direct detrimental

impact on human development, disease and morbidity across the life course.

     Allostatic load. Early childhood stress has a weathering effect on physiological

and psychological functioning and development (Logan-Greene et al., 2014). This

weathering effect is considered to affect allostasis—the biological process for adaptation

to external environmental and internal physiological changes (Danese & McEwen, 2012).

Research has shown a link between childhood stress and adversity and a phenomenon

termed "allostatic load" (Hostinar & Gunnar, 2013; Widom et al., 2015). Allostatic load

is directly related to physical health outcomes and is empirically measured through a

composite of biomarkers such as blood pressure and C-reactive protein levels (Danese &

McEwen, 2012; Geronimus et al., 2006; Widom et al., 2015). Allostatic load refers to the

physiologic stress response that leads to increased vulnerability to disease through stress-

mediated changes in the biological regulatory systems (Danese & McEwen, 2012; Logan-

Greene et al., 2014; McEwen & Wingfield, 2010). These changes, in turn, result in

increased disease risk disease in various systems including endocrine, cardiovascular,

immune, metabolic and neurologic (Atkinson et al., 2015; Hostinar & Gunnar, 2013;

Widom et al., 2015).

     Simply, chronic environmental stress puts a burden on the autonomic nervous

system, which then compromises the body's ability to cope with and recover from

physical illness and psychological stress later in life. Widom, Horan & Brzustowicz

(2015) conducted a prospective cohort study—following participants first identified in

childhood prospectively into adulthood. Participants were first selected from a pool of

children with court-substantiated child abuse and neglect offenses. This group was then

matched with a control group of non-abused children according to age, sex, race and

family SES. Both study and control pairs were located and interviewed 22-30 years after

the initial court cases in three subsequent data collection points. A medical exam was

conducted during the third and last inteview (Widom et al., 2015). The authors found a

direct significant relationship between childhood maltreatment and allostatic load in

adulthood. The direct relationship continued to be significant after potential mediating

factors were introduced into the analysis such as social support or externalizing behaviors

in adolescence. The study also indicated an indirect, but less significant relationship

between SES and allostatic load through an increased risk for childhood maltreatment in

lower SES (Widom et al., 2015). From an LCHD perspective, the findings in this study

contribute to the literature on the association between CA as a risk factor for morbidity in

several ways. First, it controlled for SES, noting a direct relationship between childhood

maltreatment and allostatic load in adulthood, which is not confounded by socioeconomic

factors. Second, due to its prospective design, it shows the long-reaching and cumulative

effects of childhood maltreatment across the life course and provides robust methodology

to ascertain that link. Third, Widom et al. (2015) establish a direct link between CA and

allostatic load in adulthood.

     Childhood adversity and allostatic load. Allostatic load is the toll chronic stress

and adversity take on neurological and physiological development (McEwen, 2003).

Research into allostatic load has operationalized how physiological systems are affected

by childhood stress through the measuring of specific biomarkers (Danese & McEwen,

2012; Hostinar & Gunnar, 2013). For example, studies have shown how chronic stress causes structural changes in neuroanatomy, in particular the amygdala and hippocampus (McEwen, 2003). Other studies have shown CA causes changes in the hormonal system and the neuroendocrine stress response, which mirror changes in the brain triggered by depression (Heim et al., 2008). Finally, stress in childhood and adolescence causes increased glucocoricoid steroid production, resulting in inhibited neurogenesis, altered synapse formation and impaired brain functioning and development (Lupien et al., 2009).

The effects of childhood stress go beyond physiological weathering and increased risk for chronic disease. By altering brain development and functioning, allostatic load results in increased risk for emotional and behavioral dysfunction (McEwen, 2003; G. E. Miller, Chen, & Parker, 2011). Allostatic load is associated with depression and other mood disorders (Lupien et al., 2009; McEwen, 2003). Schilling et al. (2008) sought to examine the operationalization of cumulative CA and its effect on mental health in adulthood. With a prospective study design with a racially and ethnically diverse sample of young adults, the authors collected data on cumulative exposure to adversity and mental health outcomes across two separate waves of data collection. The study found a positive curvilinear relationship between cumulative adversity in childhood and depressed mood, drug use and antisocial behavior in late adolescence and young adulthood. However, when statistical analysis stratified the data by severity of the adverse events experienced by the participants, the authors found poorer mental health outcomes were directly associated with more severe adverse events (Schilling et al., 2008). The authors posit high impact adversities (e.g. being sent away from home, witnessing a death, combined sexual abuse and assault, physical abuse, or severe neglect)

had a significant direct effect on mental health outcomes, beyond the initial association found with high cumulative adversity. Time-limited, lower intensity traumatic events such as being hospitalized, being a victim of a natural disaster, or parental separation/divorce showed no positive linear effect on mental health (Schilling et al., 2008). This study supports both the direct and indirect mechanisms connecting exposure to adverse experiences and mental health outcomes—the findings corroborate the direct effect of more severe adverse experiences on mental health, as well as the existence of a cumulative CA effect. Both of these mechanisms are associated with allostatic load (Danese & McEwen, 2012; Gustafsson et al., 2014).

Childhood Adversity and Psychiatric Disorders in Adulthood

Multiple studies have shown a positive relationship between CA and psychiatric disorders in adulthood (Lacey, Bartley, Pikhart, Stafford, & Cable, 2014; Laumann-Billings & Emery, 2000; Turner & Turner, 2005). Allostatic load may be associated with eroding the behavioral coping mechanisms and protective factors that could mediate its effects on mental health disorders. Miller, Chen and Parker (2011) posit allostatic load may be linked to poor social functioning, impaired social bonds, and impaired self-regulation (potential for hostility and isolation). Childhood stress and the corresponding allostatic load is associated with impaired ability to identify and process emotions (Young & Widom, 2014). These emotional and behavioral deficits, coupled with the increased risk for psychopathology overall, create a synergistic effect resulting in increased severity of psychiatric symptoms and frequency of clinically significant episodes in adulthood (Hammen et al., 2000; Heim et al., 2008; van Dam et al., 2015).

Studies show a higher prevalence of psychiatric disorders among adults who have been

exposed to CA (Chapman et al., 2004; Danese et al., 2009; Spinhoven et al., 2010).

Childhood adversity as a risk factor for psychopathology. Population based

studies have found a strong association between exposure to childhood adversity and

adult psychophathology (Afifi et al., 2008; Colman et al., 2014; Green et al., 2010;

Korkeila et al., 2005; van Dam et al., 2015; Wiersma et al., 2009). CA is associated with

impairment in cognitive and affective functioning necessary for mental and emotional

wellbeing (Pechtel & Pizzagalli, 2011). Exposure to childhood trauma can lead to

neurodevelopmental problems with functions such as emotion regulation, executive

functioning, and processing of social and affective cues and can result in behavioral

health disorders (Horwitz, Widom, McLaughlin, & White, 2001; Pechtel & Pizzagalli,

2011; Young & Widom, 2014). For example, studies have found exposure to adverse

childhood experiences is a risk factor for developing mood disorders in adulthood

(Colman et al., 2014).

Secondary analysis of the Felitti et al. (1998) CDC ACE study found a strong

graded relationship between exposure to adverse childhood experiences and the risk of

developing a depressive disorder in adulthood (Chapman et al., 2004). The authors

analyzed effect of the ACE score on depression both as a total score, as well as separately

to determine the effect of each type of adverse experience. Having a mentally ill

household member was excluded from the total ACE score due to the potential for

counfounding genetic or experiential factors. Chapman et al. (2004) found a strong dose-

respondent relationship between ACE score and depression. Among women, exposure to

three to four adverse experiences increased the odds of lifetime depression by a factor of

three compared to women with no exposure. This factor increased to five in women exposed to five or more adverse experiences. The effect on men was weaker, but still significant: men with three to four adverse experiences had an odds ratio of 1.9-2.9 of developing depression in their lifetime compared with men with no exposure (Chapman et al., 2004). Finally, logistic regression analysis for the effect of each type of ACE showed emotional abuse posed the greatest risk of developing a depressive disorder in adulthood compared to all other adverse experiences. Women who reported exposure to emotional abuse were 2.7-3.1 times more likely to be depressed as adults than women who were not emotionally abused. The magnitidue of risk was similar among men (2.5-3.3 OR compared to men with no exposure) (Chapman et al., 2004). Other studies have also found a link between childhood emotional abuse and neglect and depression in adulthood (Spinhoven et al., 2010; van Dam et al., 2015). Aside from depression, childhood adversity is a risk factor for developing all classes of behavioral health disorders across the lifespan, including psychosis (Janssen et al., 2004; van Nierop et al., 2015), substance use disorders (Anda et al., 2002; Fenton et al., 2013; Volkow, Koob, & McLellan, 2016), and personality disorders (Crowell, Beauchaine, & Linehan, 2009; Newton-Howes, Clark, & Chanen, 2015). Empirical evidence shows childhood trauma and stress is associated with increased overall mental and emotional problems in adulthood (Horwitz et al., 2001; Kessler et al., 2010; Lereya et al., 2015; Rutter & Maughan, 1997).

Neurobiological development. The relationship between CA and adult psychopathology is significant and may be neurobiological in nature, according to recent studies. Neuroimaging studies in the past ten years increasingly show depression in adults

with histories of childhood trauma and maltreatment may be biologically different than

depression among adults without exposure to CA (Danese et al., 2008, 2007, Heim et al.,

2008, 2010). As noted previously, childhood adversity is associated with allostatic load—

a process weathering marked by increased inflammation in biological systems. For

example, Danese et al.'s (2007) longitudinal birth cohort study followed a sample

(n=1,000) to 32 years of age and found maltreated children had clinically relevant

inflammatory biomarkers (C-Reactive protein) 20 years after exposure to abuse. This

increased inflammation was clinically significant independent of other early life risk

factors such as low birthweight, low SES, low intelligence quotient (Danese et al., 2007).

From a LCHD standpoint, CA poses a direct risk trajectory for psychiatric

disorders. This trajectory starts with exposure to CA, which triggers inflammatory

biological pathways, this in turn may result in emotional problems and increased

reactivity to stress (Copeland, Shanahan, Worthman, Angold, & Costello, 2012; Heim et

al., 2008). Episodes of psychiatric symptomatology increase biological vulnerability to

future episodes (Copeland et al., 2012). Allostatic load, inflammatory biomarkers, and

inflammatory pathways in the brain are found in people with depressive disorders, those

with cumulative exposure to CA, and people experiencing persistent psychosocial stress

(Danese et al., 2008; Lanquillon, Krieg, Bening-Abu-Shach, & Vedder, 2000; Miller,

Maletic, & Raison, 2009).

Of note, in the case of depression, CA may be associated with not only increased

vulnerability to adult depression, but with a more severe form of depression independent

of psychosocial stress and genetic predisposition. For example, when controlling for

childhood maltreatment, elevated levels of inflammatory biomarkers among depressed

adults are only signficant when a history of childhood maltreatment is also present

(Danese et al., 2008). Thus, although studies have linked inflammatory processees in the

brain to depression (Copeland et al., 2012; Miller et al., 2009) and poor response to

depression treatment (Lanquillon et al., 2000), this may only be significant among adults

exposed to CA. Heim et al. (2008), note childhood trauma and adversity cause functional

changes in brain structure and chemistry, as well as the individual's ability to respond to

stress. This results in increased overall risk for developing psychiatric disorders, earlier

age of onset of symptoms, and increased severity and chronicity of symptoms (Chapman

et al., 2004; Erol et al., 2013; Gladstone et al., 2004; Lara et al., 2000; Mersky et al.,

2013; Schilling, Aseltine, & Gore, 2007). These relationships are detailed in the

following sections.

Childhood adversity and age of onset of psychiatric symptoms. Aside from the

increased vulnerability to developing psychiatric disorders, studies show CA is also

linked with an earlier age of onset of clinically significant symptoms (Kessler et al.,

2010; Wiersma et al., 2009). This finding has been consistent with both general

population and clinical samples. For example, Schilling et al. (2007) conducted a

prospective, two-wave design study on a population of adolescents from ethnically and

economically diverse communities in Boston, Massachusetts. The authors found

exposure to CA was significantly associated with onset of depression in young adulthood

(Schilling et al., 2007, 2008). This association was also found in a longitudinal cohort

study on the long-term course of depression in a large national sample (Wiersma et al.,

2009). The study was conducted in the Netherlands with a sample (n=2981) of depressed

individuals receiving care in a variety of healthcare settings. The authors found exposure

to CA accounted for 70.4% ($p > .001$) of participants who developed early onset

depression, quantified as the onset of clinical symptoms of depression before age 21. As

in previous studies, the effects of childhood trauma were cummulative and dose-

respondent, with significant effects of severity and chronicity of depression symptoms,

along with the decreased age of onset (Wiersma et al., 2009).

Gladstone et al. (2004) reported similar findings among a clinical sample (n=125)

of women diagnosed with depressive disorder: childhood trauma accounted for 70% of

the respondents who met the clinical criteria for early onset depression. Among this

population, participants exposed to childhood trauma were also more likely to engage in

non-suicidal self injury and to report a history of suicide attempts. The next section

reviews the literature on the association between CA and suicidal behavior.

Childhood adversity and suicidal behavior. The research literature shows a

positive relationship between exposure to adverse childhood experiences and suicidal

behavior in adulthood. A review of Felitti et al.'s (1998) CDC ACE study findings found

a strong dose-respondent relationship between ACE score and suicide attempts in

adolescence and adulthood (Dube et al., 2001). Contrary to the findings by Schilling et al.

(2008), Dube et al. (2001) found adverse experiences, regardless of category, increased

the risk of attempted suicide by two to five times. This increased likelihood of suicidal

behavior with exposure to childhood trauma and adversity has been supported by other

studies. Brown, Cohen, Johnson, & Smailes (1999) conducted a 17-year longitudinal

study, following a cohort of 776 children from childhood to young adulthood to

determine the impact of childhood maltreatment as well as environmental factors on

mental health in adolescence and adulthood. The authors found participants who were

maltreated in childhood were three to four times more likely to develop a depressive

disorder and attempt suicide in adulthood (Brown et al., 1999). Compared to children

who were not maltreated, the children exposed to adverse experiences were more likely

to have more severe symptoms of depression and suicidal behavior. This relationship

remained significant after controlling for contextual factors such as parental level of

education, SES, and marital quality. Strengths of the study include the use of both

retrospective reports of childhood maltreatment and data from official state agencies to

verify child abuse cases. The authors indicate a limitation was their narrow definition of

self-reported neglect (being left alone overnight before 10 years of age), which may have

resulted in underreporting of neglect (Brown et al., 1999).

　　　　A more recent study on the association between childhood trauma and suicidal

behavior focused on comparing three groups: a group of patients diagnosed with major

depressive disorder in full remission with a history of suicide attempts (n=30), a second

group of patients diagnosed with major depression in full remission without a history of

suicide attempts (n=30), and a healthy control group (n=30) who matched the patient

groups in age, gender and education (Erol et al., 2013). The study used the Childhood

Trauma Questionnaire (CTQ), which consists of three subscales: emotional abuse and

neglect, physical abuse and sexual abuse. Like with Brown et al. (1999) findings, Erol et

al. (2013) found significantly higher scores in all three subscales of the CTQ among

patients who had attempted suicide versus either the patient group without suicide

attempt histories or the control group. The authors found no difference between controls

and the patient group without a history of suicide attempts.

A recent cross-sectional study analyzed the relationship between type of ACE exposure and mental health outcomes on a sample of Native American adolescents and young adults (n=288) living on a reservation (Brockie et al., 2015). The study stratified traumatic experiences ranging from physical and emotional abuse/neglect, sexual abuse, witnessing intimate partner violence, to discrimination. Data was also analyzed to determine the effect of experiencing at least one ACE as well as the cummulative sum of all adverse experiences. Similar to previous studies, the authors found gender-related differences: females were more likely to have experienced emotional and sexual abuse, and males were more likely to have experienced physical neglect. Overall, emotional abuse was most common across the sample, with 48% participants endorsing this type of abuse and sexual abuse the least common, with only 20% of participants reporting it (Brockie et al., 2015). This population reported a much higher distribution of ACE compared to other studies: 78% of participants reported at least one ACE (Felitti et al. (1998) reported 52% of participants in their study reported at least one ACE). Brockie et al. (2015) found corresponding high rates of depression (21%) and lifetime suicide attempts (30%). Moreover, considering the effect of specific types of abuse, physical abuse most strongly increased the odds of both depression and suicide attempt. Consistent with the graded effect, high ACE scores were associated with four and a half times increased odds of depression symptoms and twice the odds of suicide attempts when compared with low ACE scores (Brockie et al., 2015). The authors note a significant and cumulative impact of both number and type of adverse experience with both depression and suicidal behavior.

Symptom severity. Aside from increased suicidality, exposure to CA is associated with increased severity and chronicity of symptoms, and poorer response to treatment (Gladstone et al., 2004; Hammen et al., 2000; Kim et al., 2013; Wiersma et al., 2009). A study of college students with recent onset of major depressive disorder found CA was significantly associated with more severe symptoms and increased likelihood of relapse after six months (Lara et al., 2000). Other studies have shown similar findings in clinical settings. For example, Hayden and Klein (2001) conducted a prospective study on a clinical sample (n=86) of patients diagnosed with early onset dysthimic disorder.The authors found early CA was associated with higher levels of depression at five years after the initial diagnosis (Hayden & Klein, 2001).

Zlotnick, Mattia, & Zimmerman (2001) also studied a sample of treament-seeking participants with depression (n=225) in outpatient clinics. They found childhood trauma was significantly associated with increased duration and chronicity of depressive symptoms. The findings were consistent after controlling for the high degree of comorbidity between depression, borderline personality disorder and anxiety disorders among patients who were exposed to childhood trauma. Indeed, co-morbidity between depression and other psychiatric symptoms and disorders may be a key clinical feature among depressed patients with exposure to CA (Subica, Claypoole, & Wylie, 2012; van Nierop et al., 2015). This co-morbidity, coupled with increased sensitivity to stress, may contribute to relapse and poorer response to treatment (Nemeroff et al., 2003; van Dam et al., 2015). Trauma exposure is positively correlated with the degree of depression severity, and inversely correlated with overall physical and mental health outcomes (Subica et al., 2012). Other studies have found a significant association between

childhood exposure to emotional abuse and neglect, and co-morbid depression and social

phobia in adulthood (Gibb, Chelminski, & Zimmerman, 2007; Spinhoven et al., 2010).

      Data from the Chicago Longitudinal Study, a panel of low SES, racial and ethnic

minorities (93% African American, 7% Latino) born in Chicago between 1979-1980

supports the link between CA, depressive symptoms in adulthood and other co-

morbidities (Mersky et al., 2013). Data from the adult survey of the Chicago Longitudinal

Study (participants aged 22-24, n=1,142), found high rates of exposure to CA: 79% of

participants had at least one ACE exposure, 48.9% had more than one. Comparing the

results to the original ACE study where 51.5% of participants had at least one ACE and

25.6% had multiple (Felitti et al., 1998). However, Mersky et al. (2013) used different

methodolgy to measure ACEs than Felitti, et al. (1998). The advantage of the longitudinal

study design, with multiple data collection points collected from when participants were

in kindergaten to young adulthod, allowed for both retrospective endorsements of adverse

experiences in childhood and collateral reports. Mersky et al. (2013) defined eight

dichotomous ACE variables in their study: household child protective services record for

abuse and neglect, personal victim or witness of violent crime, parental substance abuse,

prolonged absence of parent, parental divorce, death of a close friend or relative, frequent

family conflict, and family financial problems.

      As with previous studies, Mersky et al. (2013) found a strong, graded relationship

between childhood exposure to adverse experiences and psychopathology in young

adulthood. Participants with ACE exposure were more likely to report frequent

depressive symptoms (at least one depressive symptom a few times a week or more in the

past month), have worse overall health, lower life satisfaction, and also report more

frequent anxiety (Mersky et al., 2013). Following an LCHD perspective, the authors

conclude depression in young adulthood may act as a pathway connecting childhood

trauma and adversity to long-term physical and mental health consequences later in life

(Mersky et al., 2013).

Response to treatment. The literature reviewed thus far indicates a significant

relationship between exposure to adverse childhood experiences, and depression in

adulthood (Gladstone et al., 2004; Mersky et al., 2013; Schilling et al., 2007; Spinhoven

et al., 2010; Wiersma et al., 2009). In addition, in both population-based and clinical

samples, childhood trauma is associated with more frequent and severe depressive

episodes, and co-morbid conditions (Gibb et al., 2007; Lara et al., 2000; Spinhoven et al.,

2010; Subica et al., 2012; Zlotnick et al., 2001). This mixture of increased vulnerability

and severity of psychiatric symptoms among people exposed to CA indicates a need for

early intervention, and targeted treatment for this population (Heim et al., 2008).

Research shows depressed adults with history of childhood trauma not only have more

severe and recurrent episodes, they also have poorer response to treatment compared to

individuals without childhood exposure to adversity (Hayden & Klein, 2001; Heim et al.,

2010; Nanni et al., 2012; Zlotnick, Ryan, Miller, & Keitner, 1995).

Kim et al. (2013), conducted an analysis of data from the Clinical Research

Center for Depression program (CRESEND)—a prospective, naturalistic study of

depression outcomes. CRESEND follows a broad sample of patients diagnosed with a

depressive disorder starting at baseline of treatment onset through a series of follow up

visits, up to 52 weeks of treatment. Patients with co-morbid physical conditions were

included in the sample, however, patients also diagnosed with schizophrenia, any

psychotic disorder, bipolar disorder or dementia were excluded from the sample. Kim et al.'s (2013) data analysis was on a subset of the CRESEND study sample (n=919) treated with antidepressant medication, and followed for 12 weeks of data collection. Exposure to CA was defined as a self-report of sexual abuse, physical abuse or separation from parents at or before 12 years of age. Diagnosis of depression was obtained at baseline using a structured clinical interview, and symptom severity and treatment response were evaluated using validated clinical scales (e.g. Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, Clinical Global Impression Scale), and validated self-report measures (e.g. Beck's Depression Inventory, World Health Quality of Life Assessment Instruments, Beck's Scale for Suicide Ideation). The study findings indicated CA is associated with poorer response to treatment. Compared to controls, the particpants with history of CA had more severe symptoms of both depression and anxiety on clinical scales after 12 weeks of treatment (after adjusting for age, gender, marital status, study site, and Hamilton Depression Rating Scale score at baseline). Participants exposed to CA also scored higher on self report scales for depression and perceived stress, and lower on quality of life scales. Finally, regarding the treatment with antidepressants, participants with history of CA required both augmentation with concommittant medications, and combination treatment with other antidepressants more often than participants without exposure (Kim et al., 2013).

Regarding the effect of exposure to childhood trauma and adversity on response to treatment, Nanni et al. (2012) completed a meta-analysis on the relationship between childhood maltreatment and depression in both population-based and clinical samples. The authors analyzed data from studies published before December 31, 2010 which

included a diagnosis of depression using validated depression measures, and a definition

of CA as maltreatment (physical abuse, sexual abuse, neglect, family conflict, and/or

family violence). Data was evaluated for depression recurrence (defined as the number of

depressive episodes over the time of observation), persistence (defined as a prolonged

duration of uninterrupted illness during the period of observation), and treatment outcome

(change in depression measure scores between beginning and end of treatment). Data

extracted from the studies was converted to odds ratio effect sizes to reflect the

probability of unfavorable outcomes such as recurrence, persistence of poor treatment

outcome, with an odds ratio greater than one indicating increased likelihood of

unfavorable outcomes (Nanni et al., 2012). Among 16 epidemiological studies (combined

n=23,544) meta-analysis results indicate compared to individuals without history of

childhood maltreatment, individuals with history of maltreatment were at increased

likelihood of developing recurrent and persistent depression (odds ratio = 2.27, 95%

confidence interval, CI=1.80-2.87). Among 10 clinical trials (combined n=3,098), history

of childhood maltreatment was associated with increased likelihood of lack of response

or remission during depession to treatment compared to controls without childhood

maltreatment history (odds ratio = 1.43, 95%, CI=1.11-1.83). Clinical trials assessed

three different types of therapies: pharmacotherapy (e.g. antidepressant medication),

psychological therapy (e.g. congnitive behavioral therapy), or combined treatment (both

pharmacotherapy and psychotherapy). Data analysis indicated varying response to each

type of therapy: odds ratio for poor response to pharmacotherapy was 1.26 (1.01-1.56,

95% CI), 1.12 for psychotherapy (0.68-1.85, 95%), and 1.90 for combined treatment

(1.40-2.51, 95%). Findings suggest individuals with history of childhood maltreatment

may respond better to psychotherapy, and history of child abuse is important to consider

in designing clinical interventions for this population (Heim et al., 2008; Nemeroff et al.,

2003).

Following the LCHD framework, Nanni et al. (2012) conclude childhood

maltreatment can be conceputalized as a "developmental risk factor triggering a chain of

risks" (p. 148). These risks include increased sensitivity to stress (Hammen et al., 2000;

Heim et al., 2008; Lupien et al., 2009), changes in perception and recognition of

emotional stimuli (Garnefski, Kraaij, & Spinhoven, 2001; Heim et al., 2008; Pechtel &

Pizzagalli, 2011), and disturbances in social attachment (Gibb et al., 2007; Korkeila et al.,

2005; Leitenberg et al., 2004; Sperry & Widom, 2013). This chain of risks results in a

dose respondent relationship between ACE exposure and suicidal behavior and other

psychopathology in adulthood (Anda et al., 2006; Brockie et al., 2015; Wilcox et al.,

2012). The chain of cognitve and affective disturbances associated with CA may also

affect the way these individuals seek help and access professional mental health

treatment. The following sections will review the existing literature on help-seeking and

the effects of CA on help-seeking.

Help-Seeking

Help-seeking is a sociological construct initially developed from analyses of how

people seek help for medical symptoms. The concept originated from Mechanic's (1966)

research on how people's self-appraisals of physical symptoms prompted them to act and

access treatment. Mechanic (1982) framed help-seeking is the decision-making

component of illness behavior: a process dependent on the individual's self-evaluation of

symptoms. As applied to behavioral health, help-seeking is a coping mechanism through

which persons respond to internal psychological symptoms and "choose pathways for

care" (Mechanic, 1975, p. 395). More recent research in the concept of help-seeking has

also defined it as a form of adaptive coping (Rickwood & Thomas, 2012). Rickwood and

Thomas' (2012) systematic review of the research on help-seeking behavior yielded the

following definition: "In the mental health context, help-seeking is an adaptive coping

process that is the attempt to obtain external assistance to deal with a mental health

concern" (p. 180). Rickwood and Thomas' (2012) proposed conceptual measurement

framework for help seeking operationalizes different dimensions of the help-seeking

process. The authors operationalize help-seeking into five distinct factors: process

(attitude/orientation, intention and behavior), time-frame (e.g. in the past 12 months, in

the next four weeks), source of assistance sought (e.g. formal, informal, self-help), type

of help sought (e.g. emotional support, treatment, information), and concern (what the

person is seeking help for; e.g. depression) (Rickwood & Thomas, 2012). Before

deciding if, when and from whom to seek help, however, the person must first become

aware they are experiencing psychological symptoms, and undergo the cognitive process

of interpreting and appraising their symptoms in the context on how to cope with them

(Scott & Walter, 2010).

In operationalizing help-seeking, Rickwood and Thomas view the help-seeking

process as a rational choice shaped by individual beliefs and social norms that follows a

process from intention to specific action (Ajzen, 1991, 2002; Rickwood & Thomas,

2012). Rickwood and Thomas' conceptual model of help-seeking includes the process of

symptom appraisal, beliefs about mental health treatment and the possible consequences

of seeking help, and the influence of social norms regarding depression and professional

treatment. Consistently, research has shown that help-seeking behavior is facilitated by predisposing factors such as the ability to recognize symptoms, attitudes toward treatment, and emotional competence (Ciarrochi, Wilson, Deane, & Rickwood, 2003; Thomas, Caputi, & Wilson, 2014; Vanheusden et al., 2008). Other studies have shown how individual's social network can be an enabling factor to help-seeking and access to treatment (Gulliver, Griffiths, & Christensen, 2010; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Vogel, Wester, & Larson, 2007). One's social network can influence help-seeking and access to treatment through various paths: by encouraging help-seeking as an adaptive coping behavior, supporting help-avoidance, or coercing a person into treatment (Pescosolido, Gardner, & Lubell, 1998). Finally, active help-seeking is viewed as a system of beliefs and intentions—embedded within socio-cultural and interpersonal systems—which generally follows three distinct phases: recognizing and appraising a problem, deciding to seek help, and choosing a help provider (Wilson & Deanne, 2010). Whether the initial help provider is a friend, family member, or a mental health professional, help-seeking is a path to engaging in necessary mental health treatment for persons with depression and other psychiatric disorders (Fleury, Ngui, Bamvita, Grenier, & Caron, 2014; Shaffer, Vogel, & Wei, 2006; Vogel, Wade, Wester, Larson, & Hackler, 2007).

Help-seeking and access to treatment. Help-seeking is an important factor to consider in determining how and when people access treatment for medical and behavioral health conditions (Scott & Walter, 2010). Appropriate help-seeking can mobilize resources, facilitate problem-solving, and provide access to mental health treatment (Wilson & Deane, 2010). However, access to treatment and healthcare

utilization are complex, multi-faceted processes that can be examined from multiple perspectives. Two dominating frameworks of healthcare utilization are Andersen's (1995) Socio-Behavioral Model and Pescosolido's (1992) Network Episode Model. The following sections will provide an overview of each and how they relate to the concept of help-seeking.

The Socio-Behavioral Model. Andersen's (1995) Socio-Behavioral Model of Health Service Use views the use of health services and the resulting health trajectory as defined by existing contextual and individual conditions that predispose people to use, or not use, services. Andersen views health service use as determined by predisposing and enabling characteristics, and resulting in a health trajectory that includes outcomes related to overall health, satisfaction with services, and quality of life (Andersen, 1995; Andersen & Newman, 2005). Per Andersen, predisposing factors are individual characteristics present prior to an illness episode that shape individual healthcare use. These include factors such as demographics (e.g. older people will be more likely to need health services than younger people due to overall health deterioration natural to the aging process), genetics, and social status (e.g. educational level and marital status) that predispose an individual to utilize healthcare services (Andersen & Newman, 2005; Babitsch, Gohl, & von Lengerke, 2012; Dhingra, Zack, Strine, Pearson, & Balluz, 2010).

Enabling and impeding factors are contextual variables related to economics, resources in the social environment, and attitudinal factors regarding illness, healthcare use and its efficacy that affect patterns of healthcare utilization (Andersen & Newman, 2005; Dhingra et al., 2010). For example, having health insurance coverage is an enabling factor for health service use (Babitsch et al., 2012; Elhai & Ford, 2007). Past

treatment utilization is also an enabling factor as its associated with future healthcare use (Babitsch et al., 2012). On the other hand, poverty and financial insecurity impede health service use (Collins, Westra, Dozois, & Burns, 2004; Lasser, Himmelstein, & Woolhandler, 2006; Mojtabai et al., 2012). The literature also shows the presence of suicidal ideation or substance abuse can impede health service use (Caldeira et al., 2009; Czyz, Horwitz, Eisenberg, Kramer, & King, 2013; Deane, Wilson, & Ciarrochi, 2001; Wilson, 2010a; Yakunina, Rogers, Waehler, & Werth, 2010). The current study will control for enabling/impeding factors to define the interaction between childhood adversity and help-seeking.

Finally, Andersen defines need factors which occur at the onset of symptoms and include the type and number of symptoms as separate drivers of healthcare utilization (Andersen, 1995; Andersen, Davidson, & Baumeister, 2013; Andersen & Newman, 2005). Studies have found need factors are most closely correlated with healthcare utilization (Babitsch et al., 2012; Lin, Burgess, & Carey, 2012; Rief, Martin, Klaiberg, & Brähler, 2005). The current study will control for psychiatric need factors to account for its influence on help-seeking.

In a review of empirical studies that applied the Socio-Behavioral Model, Babitsch et al. (2012) found common predisposing factors across studies: age, gender, ethnicity, and education. Overall, being older, female, white-non Hispanic, and more educated increased the likelihood of utilizing healthcare services (Babitsch et al., 2012). Results on enabling and need factors varied across studies, and the associations between enabling factors (such as income, insurance, and health care market conditions) and utilization of healthcare services were less clear than the association between

predisposing factors and healthcare utilization. The authors did find significant

associations between need factors and healthcare service utilization. Across multiple

studies poorer physical and mental health significantly predicted healthcare utilization

(Babitsch et al., 2012). Other studies have supported these findings—factors related to

healthcare utilization are complex and the decision-making process to seek help for

physical or mental health symptoms involves socio-cultural context, culturally-defined

self-appraisal of symptoms, economic, structural and healthcare service organizational

factors (Biddle, Gunnell, Sharp, & Donovan, 2004; Fleury et al., 2014; Gulliver et al.,

2010; Rickwood & Thomas, 2012).

For example, Fleury et al. (2014) used the Andersen's Socio-Behavioral model to

examine predictors of healthcare utilization for mental health reasons among a

population-based cohort. The sample from the study was drawn from an epidemiological

catchment area in Montreal, Canada. Participants were interviewed in two waves of data

collection—the first wave had n=2,434 participants and n=1,823 participants were in the

second wave (attrition rate = 74.9%). Data was analyzed for effect on the dependent

variable of "12-month healthcare utilization for mental health reasons prior to the

interview" (Fleury et al., 2014). Independent variables were organized according to

Andersen's model (predisposing factors, enabling factors and need factors). The study

compared two groups who endorsed utilizing healthcare services for mental health

reasons: participants with mental disorders versus participants without mental disorders.

The study found that among participants without mental health disorders, healthcare

utilization for mental health reasons was strongly associated with enabling factors (social

support, income, and socio-environmental variables). In contrast, among participants with

mental health disorders, need factors (depression, panic disorder, social phobia and emotional problems) were more influential on health service utilization for mental health reasons than either predisposing or enabling factors (Fleury et al., 2014).

Following the Socio-Behavioral Model this finding supports the idea that predisposing and enabling factors shape individual attitudes and beliefs about healthcare use as well as provide the pathway to use prior to an individual becoming symptomatic (Andersen, 1995; Andersen & Newman, 2005). Participants in Fleury et al. (2014) without mental health disorders who accessed mental health treatment were facilitated by social support, higher socio-economic status, and availability of resources. This is consistent with other studies linking individual determinants as influencing help-seeking behavior and healthcare utilization. Debra Rickwood and her colleagues have conducted a variety of studies on the effect of individual determinants on mental health help-seeking intentions and behavior (Rickwood et al., 2007, 2005; Watsford & Rickwood, 2014; Wilson, Rickwood, Bushnell, Caputi, & Thomas, 2011). They found individual determinants including emotional competence, attitudes toward seeking professional help, mental health literacy, and one's social network influence help-seeking and therefore service utilization (Ciarrochi et al., 2003; Gulliver et al., 2010; Rickwood et al., 2007; Thomas et al., 2014; Wilson, Deane, Ciarrochi, & Rickwood, 2005).

Fleury et al. (2014) hypothesize the individual's seeking help for mental health reasons who did not have a mental health disorder may have had a previous history of a mental health diagnosis and were therefore being proactive in seeking help prior to developing more severe symptoms. The participants with no mental health disorder in Fleury et al.'s (2014) study were more likely to have higher household income and were

more likely to seek help for emotional problems from a psychologist (a service provider

the authors note is a professional service not covered by the public healthcare system

available to lower income individuals). Potentially, this group may have had better social

support and a more favorable attitude toward mental health professionals (Rickwood et

al., 2007; Watsford & Rickwood, 2014).

Among both groups in Fleury et al. (2014) study, social cohesion and support

played a significant role in health services utilization. In both participants with and

without mental health disorders, there was a significant association between endorsing a

sense of social cohesion (enabling factor) and an increased likelihood of healthcare

utilization for mental health reasons. This finding is consistent with other studies linking

perceived social support and mental health help-seeking behavior (Berkman, 2000;

Thoits, 2011). The role of the social environment on help-seeking and mental health

treatment utilization is important.

The Network-Episode Model. The effect of social support and community on

health service use and help-seeking is central to the Network-Episode Model

(Pescosolido, 1992; Pescosolido et al., 1998). In contrast to Andersen's deterministic

approach to health service utilization, Pescosolido's Network-Episode Model (NEM)

focuses on the dynamic interaction between the individual, their community and social

networks that create the conditions for "when, how and if" individuals seek treatment and

receive care (Pescosolido, 1992, p. 276). NEM frames help-seeking and illness behavior

as an interactive social process embedded in community context and shaped internally by

the individual's sense of agency, and externally by social networks (Pescosolido et al.,

1998). In a study of n=109 participants receiving mental health treatment for the first

time, Pescosolido et al. (1998) found three main pathways to care, each rooted in and

affected by the individual's social environment. Participants entered mental health

treatment either by 1) choice, 2) "muddling through" (neither active choice nor

resistance), or 3) coercion (p. 280). In the cases of choice, where the individual actively

decided to seek help, social ties were critical to the decision-making process by providing

the context for the individual to appraise their symptoms and decide to get help. In

accounts of "muddling through" individuals neither actively chose or resisted treatment.

Instead, individuals remained ambivalent about seeking treatment, while friends and

family members directed access to care without the participation of the respondent.

Finally, in cases of coercion, the individual actively resisted treatment while members of

their social network mandated treatment, either through courts, police or through an

imposing power differential (a supervisor, a parent). The authors conclude the conditions

of these first treatment experiences shape the individual's future help-seeking and illness

behavior—thereby potentially increasing or decreasing the likelihood of future help-

seeking behavior (Pescosolido et al., 1998).

    NEM indicates, social networks and context shape help-seeking behavior.

Research shows social support is a complex factor that can either act as a barrier to or

facilitator of help-seeking behavior (Biddle, Donovan, Sharp, & Gunnell, 2007; Doblyte

& Jimenez-Mejias, 2017; Kuwabara, van Voorhees, Gollan, & Alexander, 2007). Recent

studies show social support is positively correlated with help-seeking and increased

mental health service utilization (Fleury et al., 2014; Riosa, Preyde, & Porto, 2015;

Schomerus et al., 2013). In a non-clinical sample of US college students, higher levels of

social support were correlated with increased likelihood of seeking help (Yakunina et al.,

2010). Social support has also been shown to motivate health behaviors such as help-seeking and thus play a protective role against the cumulative effects of exposure to stress (Berkman, 1995; Thoits, 2011; Uchino et al., 1999). In contrast, other studies show no significant association between social support and help-seeking behavior (Biddle et al., 2007, 2004; Kuwabara et al., 2007). Studies focused on participants experiencing depressive episodes and suicidal thoughts indicate a correlation between increased severity of symptoms and social avoidance (Rudd, Joiner, & Rajab, 1995; Schomerus, Matschinger, & Angermeyer, 2009; Wilson & Deane, 2010). A history of trauma and victimization may further decrease intentions to seek help for depressive symptoms (Guterman, Hahm, & Cameron, 2002; Sabina et al., 2012a).

As noted previously, child abuse and adversity are correlated with allostatic load and changes in the neuro-endocrine system that can result in poor health and depression in adulthood (Danese & McEwen, 2012; Heim et al., 2010). Considering both the Socio-Behavioral and NEM model of health service use, it is possible to account for how the factors created by the convergence of exposure to CA and depression in adulthood (social isolation, limited emotional competence) can lead to limited access the social networks and cognitive-emotional skills necessary to seek help and cope with clinical symptoms effectively. Following Andersen's Socio-Behavioral Model of health service use, exposure to CA creates need factors as the person ages, increasing vulnerability to poor health, depression and co-morbid conditions (Arnow, 2004; Felitti et al., 1998; Kessler et al., 1997). In fact, research shows that CA is associated with higher healthcare costs and increased utilization of emergency departments and specialists (Tang et al., 2006; Walker et al., 1999).

Childhood adversity and healthcare utilization. A study on the healthcare utilization and costs associated with childhood abuse found a significant individual and cumulative association between childhood abuse and increase healthcare costs (Bonomi et al., 2008). The authors used a retrospective cohort design to study the association between childhood abuse and healthcare costs with a group of adult female participants (n=3,333) drawn from a regional insurance and healthcare provider in the U.S. Pacific Northwest. Overall, 51% of participants had exposure to either childhood sexual or physical abuse. Congruent with the CDC ACE Study (Felitti et al., 1998), participants in Bonomi et al. (2008) with exposure to childhood abuse were more likely to report depressive symptoms, have more physical symptoms, and have higher body mass index than participants with no history of child abuse. The authors found participants with child abuse histories had significantly higher rates of healthcare utilization and associated costs compared to participants without childhood abuse exposure (Bonomi et al., 2008). Women with histories of both childhood sexual and physical abuse had total annual healthcare costs that were 36% higher than women with no history. Women with childhood abuse histories had higher healthcare utilization rates in several areas: mental health, hospital outpatient, emergency department, primary care, specialty care, and pharmacy services. The authors conclude a history of child abuse may be a need factor driving healthcare service use (Bonomi et al., 2008).

Other epidemiological studies had similar findings. For example, Chartier et al. (2010) studied the effects of childhood exposure to adversity on a population-based sample (n=9,965) in the Ontario Health Survey. The study defined CA as exposure to any of the following: physical and/or sexual abuse, parental/marital conflict, poor parent-child

relationship, low parental education level, and parental involvement in psychotherapy. The study found high rates of ACE exposure with 72% of all respondents reporting exposure to at least one ACE, and 37% of respondents reporting exposure to two or more adverse childhood experiences (Chartier et al., 2010). As with Bonomi et al. (2008), Chartier et al. found exposure to CA was significantly associated with increased healthcare service utilization. Again, childhood trauma and abuse was a predisposing factor for health service use in adulthood: ACE exposure was correlated with increased emergency department visits, increased general practitioner and health professional use, the presence of multiple health problems, poor self-rated health, chronic pain issues, and disability (Chartier et al., 2010).

   Exposure to childhood adversity and somatic symptoms. The link between exposure to CA and increased healthcare utilization may be related to the effect of trauma on brain development and the individual's ability to appraise psychological symptoms, mistaking them as somatic issues instead (Heim et al., 2008). A study of female participants recruited from a health maintenance organization reviewed the relationship of childhood sexual abuse and depression with somatic symptoms and healthcare utilization (Newman et al., 2000). The study collected data on 602 adult female members of Kaiser Permanente health maintenance organization (HMO). The participants completed self-report measures on somatic symptoms, level of activity, number of doctor visits, and a brief sexual and physical abuse screen. Depression was measured using the Beck's Depression Index and participants were dichotomized into two categories: low depressed mood and high depressed mood. The study also reviewed medical records on a subset (n=136) of participants to compare objective data on medical utilization and

number of healthcare visits over the course of two years. Newman et al. (2000) found

participants who experienced childhood sexual abuse had more somatic symptoms and

healthcare utilization as adults than non-abused adults. The study supported previous

studies showing a cumulative effect between abuse types: participants who reported a

history of sexual abuse in Newman et al. (2000) were 5.51 times more likely than

controls to have also experienced physical abuse as children. Regarding somatic

symptoms, participants with childhood abuse histories were more likely than controls to

report issues with pain (headache, migraine, sinus pain, and muscle and joint pain),

gastrointestinal problems (constipation, diarrhea, and indigestion), and upper respiratory

issues (fever and productive cough). Also, participants with abuse histories were more

likely than controls to experience more disability from illness—decreased activity and

less productive days.

> *Childhood adversity and Andersen's Socio-Behavioral Model of Health Service*

Use. Newman et al. (2000) findings correlate with the Socio-Behavioral Model's framing

of childhood abuse as a predisposing factor for healthcare utilization. Participants in the

study with child abuse histories had higher rates of outpatient internal medicine and

surgical visits than controls. There was no significant difference between the groups in

the total number of inpatient visits, emergency department, or outpatient visits for Ear,

Nose and Throat, Gynecology, Ophthalmology, or Psychology/Psychiatry (Newman et

al., 2000). However, when depression symptoms were introduced into the statistical

analysis as a moderating factor, the study found participants with child abuse histories

had significantly more emergency department visits, inpatient internal medicine visits,

and inpatient ophthalmology visits than depressed individuals without abuse, and

individuals with abuse histories but no depression symptoms. Again, even among the group of individuals with abuse exposure and current depression symptoms, there was no difference with controls on the number of psychology/psychiatry visits, indicating that although the confluence of depression and childhood abuse exposure was associated with increased healthcare utilization, it was not associated with increased mental health help seeking behavior. Participants in Newman et al. (2000) were also offered free time-limited group therapy to focus on childhood sexual abuse issues, however, only one participant (> 1%) agreed to participate in the group. The authors note a history of childhood sexual abuse may be correlated with a "possible reluctance" to seek psychotherapy services to resolve trauma-related issues (Newman at al., 2000, p. 1074). Although adults with a history of child abuse are more likely to have increased somatic symptoms and utilize some medical services at higher rates, they may also be less likely to seek mental health treatment. In other words, exposure to childhood adversity may be a predisposing factor for health service utilization, but an impeding factor for mental health treatment utilization. The present study tested the interaction between exposure to childhood adversity and attitudes toward help-seeking.

Childhood adversity and help-seeking sources. Childhood trauma can shape a person's ability to appraise their psychological symptoms, or symptoms of depression, and their beliefs about the efficacy or usefulness of treatment. In a study of a national sample of Latino women (n=714) who were victims of sexual assault, the women who had been exposed to childhood victimization were significantly less likely to seek help from both formal and informal sources than women without exposure to childhood trauma (Sabina et al., 2012a). Other studies have shown a cumulative effect of CA on

increased healthcare costs and the number of somatic complaints without etiology or

identified pathology (Chartier, Walker, & Naimark, 2007; Katon, Sullivan, & Walker,

2001; Tang et al., 2006; E. A. Walker et al., 1999). These studies consistently find an

association between exposure to CA and increased healthcare utilization, increased

emergency department and outpatient visits. Potentially, childhood abuse and adversity

leads to both poorer health and mental health outcomes in adulthood, but also to less

effective use of available healthcare resources. Individuals exposed to CA are less likely

to seek help for depression and other mental health issues and when they do access

treatment, they often do so for somatization and medical symptoms of unexplained

origins. As exposure to CA increases the likelihood of additional trauma across the life

span (Atkinson et al., 2015; Padgett, Hawkins, Abrams, & Davis, 2006; Subica et al.,

2012), cumulative victimization in adulthood my lead to "disorders of extreme stress"

(van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Cumulative adversity

along the life course which starts in exposure to childhood trauma can create a syndrome

that includes somatization, disruption in affect regulation, alterations in self-perception,

and mistrust of others (Cook et al., 2005; Heim et al., 2010; van der Kolk, 2005; van der

Kolk et al., 2005). Exposure to CA may disrupt adaptive coping, and shape a person's

attitudes toward mental health help-seeking by impairing an individual's ability to

appraise their own psychological symptoms and to connect to members of their social

network who would facilitate access to treatment (Ginzburg et al., 2006).

      Attitudes toward help-seeking. A person's attitude toward seeking help is

correlated with the likelihood of engaging in treatment (Bonabi et al., 2016; ten Have et

al., 2010). The NCS-R operationalized attitudes toward professional help-seeking as

comprised of four main components: intentions to mental health treatment, level of

comfort with self-disclosure to a mental health professional, perceived social stigma

associated with receiving mental health treatment, and perceived efficacy of mental

health treatment (Jagdeo, Cox, Stein, & Sareen, 2009). A secondary data analysis from

the NCS-R by Gonzalez, Alegria, and Prihoda (2005) found an interaction effect between

age, gender, ethnicity/race and education, and attitudes toward professional treatment.

The study controlled for relevant clinical and sociodemographic factors (e.g. psychiatric

need, insurance status). Attitudes toward seeking treatment interacted with age, race, and

education to drive health behaviors through utilization of general medical care or

specialty mental health care (Gonzalez, Alegria, & Prihoda, 2005). Increased service

utilization of specialty mental health treatment was positively correlated with: Increased

comfort levels talking to a professional among 18–34 year old's, and for Latinos and non-

Latino whites; with stronger beliefs in treatment efficacy among African Americans; and

with greater willingness to seek help for respondents with higher levels of education, and

among males. Reported willingness to seek professional help was associated with general

medical care for all demographic groups (Gonzalez et al., 2005). Following Andersen's

Socio-behavioral model demographics, and beliefs toward the use and efficacy of

professional treatment are predisposing factors to healthcare utilization (Andersen &

Newman, 2005; Babitsch et al., 2012). Socio-behavioral factors shape attitudes toward

help seeking and thereby facilitate service utilization (Biddle et al., 2007, 2004;

Eisenberg, Speer, & Hunt, 2012). These socio-behavioral factors include coping, help-

avoidance, symptom appraisal, attitudes toward self-disclosure (Biddle et al., 2004; Deen,

Bridges, Mcgahan, & Andrews, 2012; Rickwood et al., 2005; Saklofske, Austin,

Galloway, & Davidson, 2007). In addition, the Network Episode Model can be integrated into the Socio-behavioral model when considering the role of social support, social determinants of health, and socio-environmental resources as predisposing factors to healthcare utilization. The following section expands on the role of these factors.

Help-seeking as a coping behavior. Early research on coping focused on the cognitive and behavioral responses to internal and external stressors perceived as taxing or exceeding a person's resources and abilities (Folkman & Lazarus, 1985; Lazarus, 1993). Other researchers focused on the role of temperament and defined two primary coping styles: engagement or approach coping (marked by an effort to address the stressor and related emotions through seeking support and regulating emotions); and disengagement or avoidance coping (marked by efforts to escape, avoid, and/or deny the threat and related emotions) (Carver & Connor-Smith, 2010; Carver, Scheier, & Weintraub, 1989; Derryberry, Reed, & Pilkenton-Taylor, 2003). Research on help-seeking for behavioral health symptoms has found data to support both approach coping (Hunt & Eisenberg, 2010; Mackenzie, Erikson, Deane, & Wright, 2014; Roness, Mykletun, & Dahl, 2005) and avoidance coping styles (Biddle et al., 2004; Caldeira et al., 2009; Vogel, Wester, et al., 2007; Wilson, 2010b; Yakunina et al., 2010; Ye, Shim, & Rust, 2012).

From a life course perspective, coping and therefore help-seeking can be viewed as an adaptive, episodic and interactional process (Skinner et al., 2003). In other words, coping styles are shaped over time by innate biological temperament, normative development and the social environment; moreover, how an individual copes with stress at any particular point in time is also shaped by context (individual and social factors),

and real-time internal and external responses (Skinner & Zimmer-Gembeck, 2007). As

the abused child becomes an adult, their ability to seek help and cope effectively with

symptoms of depression are shaped by the confluence of brain development, personality

development, life course exposure to stress, social support, and personal resilience and

competence (Masten, 2006; Masten et al., 2004; Shiner, Masten, & Tellegen, 1998).

Research shows protective factors such as social support can mediate CA's effect on

coping. For example, studies show social support to have a moderating effect on the

direct relationship between childhood abuse and anxiety, depression and illicit drug use

in adulthood (Sperry & Widom, 2013). Therefore, social support may also impact the

relationship between CA exposure and lifespan development.

On the other hand, risk factors such as negative emotionality, severity of

depression symptoms, lack of social attachment, and identity factors can lead to patterns

of help avoidance (Biddle et al., 2007; Deane et al., 2001; Masten et al., 2004; Schomerus

et al., 2013; Wilson, Rickwood, et al., 2011; Yakunina et al., 2010). Help-avoidance is a

concept that has been studied at length and provides a useful framework to examine the

potentially damaging role of CA on a person's ability cope with stressors effectively and

seek help.

Impeding factors and help-avoidance. One form of disengagement coping is

help-avoidance, also called help-negation in the literature, is defined as the refusal to

access or accept available help (Deane et al., 2001; Yakunina et al., 2010). Across

studies, most people who meet clinical criteria for mental health disorders do not seek

help (Eisenberg et al., 2012; Mojtabai et al., 2002). Generally, participants either

normalize their symptoms, indicate they believe symptoms will go away on their own, or

state a desire to solve their problems without help (Rickwood et al., 2007; Rickwood, Thomas, & Bradford, 2012; Wilson, Rickwood, et al., 2011). In fact, low perceived need is often cited in the literature as a reason for not seeking help (Cepeda-Benito & Short, 1998; Cheng, Mcdermott, & Lopez, 2015; Schomerus et al., 2009; Vogel, Wester, et al., 2007). A population-based study of 3,338 adults in the Netherlands found that of the subset of participants who met criteria for clinical levels of psychopathology, the majority (65.5%) did not seek mental health treatment (Vanheusden et al., 2008). Of the participants who met clinical criteria but did not seek treatment, 63.7% admitted to having psychological problems. This group of non-help-seekers was broken down into two categories: 1) those who perceived their problems as self-limiting, and 2) those with a negative perception of help-seeking. Vanheusden et al. (2008) found practical reasons for not seeking treatment (not knowing where to seek help, not having adequate resources) were not significant for either group. However, the two groups varied in the primary reasons cited for not seeking help. Among the group who perceived their psychological problems as temporary, the primary reasons cited for not seeking mental health treatment (in rank order) were: wanting solve problems alone, not thinking problems were serious, having enough support through social network, and thinking problems would go away. The group who perceived help-seeking negatively also cited wanting to solve their problems on their own, and thinking problems would resolve on their own as primary reasons for not seeking treatment. This group also cited believing seeking help was a sign of weakness, having difficulty with discussing personal problems, and being afraid of how they will be viewed by others. The inability to properly self-appraise symptom severity and negative attitudes toward mental treatment

are barriers to help seeking that may be shaped through experiencing trauma across the life span.

Rudd, Joiner and Rajab (1995) propose help-negation is a function of adaptive coping style, personality, and cumulative stress. The authors studied the concept of help-negation among two groups of outpatients—those who completed treatment (n=143) and those who withdrew prematurely (n=45). The groups were comparable in terms of diagnosis, symptom severity (depression, anxiety, and suicidal ideation), and level of hopelessness. However, the help-negation group reported significantly higher exposure to life stressors and significant differences in personality traits (Rudd et al., 1995). Participants who evidenced help negation had avoidant coping styles with negativistic and passive-aggressive personalities. Rudd et al. (1995) theorize the confluence of avoidant coping with negative personality traits creates interpersonal difficulties and problems with trust and intimacy. In an acute crisis, these vulnerable individuals are least likely to seek help and support. As with Vanheusden et al. (2008) non-help-seeking group, the participants in Rudd et al. (1995) who avoided treatment may have viewed help-seeking as weakness and feared the intimacy of self-disclosure.

Some qualitative studies have sought to understand the factors contributing to self-negation. For example, Biddle and colleagues used their research to understand the non-help-seeking phenomenon and conceptualized the "Cycle of Avoidance" (Biddle et al., 2007, 2004). Biddle et al.'s (2007) qualitative study used semi-structured interviews to obtain detailed narratives of the illness behavior of help-seeking and non-help-seeking young adults' (n=23) with mental health issues. The study found several issues affected the help seeking process. Participants in the study sought to avoid seeking help by

appraising their symptoms as normal versus "real" (extreme), shifting the definition of

"real" distress to accommodate increasing severity of symptoms, and correlating help-

seeking with permanent mental illness, disruptive treatment and new identity status as

mentally ill. Participants coped with the distress through self-harm and substance use,

with the goal of avoiding help-seeking and its consequences (identity shift, stigma, and

potential change to life course from healthy person to patient) (Biddle et al., 2007). The

Cycle of Avoidance was a dynamic process marked by long periods of non-help-seeking,

a lay-diagnosis framework for evaluating symptoms, and a continuing and cyclical

process used to rationalize or adapt to symptoms to avoid a "real" diagnosis (Biddle et

al., 2007, p. 976). In the cycle of avoidance, individuals normalize and suffer through

increasing levels of psychological distress to avoid seeking treatment.

The process of help-avoidance renders the most at-risk individuals the least likely

to seek help and support for mental health symptoms (Thomas et al., 2014). A variety of

studies have shown a negative relationship between severity of psychological symptoms

and intentions to seek help (Deane et al., 2001; Wilson, 2010b; Wilson & Deane, 2010;

Yakunina et al., 2010). Using a sample of 302 college undergraduate students, Deane et

al. (2001) studied the relationship between suicidal ideation, hopelessness, and help-

seeking intentions. The authors found higher suicidal ideation was inversely correlated

with intentions to seek help from all sources (friends, family, or mental health

professionals). The study showed although participants were likely to endorse intentions

to seek help from friends and family for generic personal problems, they were less likely

to seek help for suicidal thoughts. Suicidal ideation was associated with decreased

intentions to seek help from all sources, with a significantly negative relationship

between suicidal ideation and intentions to seek professional mental health treatment (Deane at al. 2001). The authors also found no association between hopelessness and help-seeking intentions. In a follow-up study, Wilson and Deane (2010) examined the role of depression and anxiety on help-negation for suicidal ideation. The study sample population was similar to Deane et al. (2001): n=302 psychology undergraduate students, and had the same findings regarding suicidal ideation and help-seeking intentions. Again, a significant inverse relationship exists between suicidal ideation and intentions to seek help from all sources, independent of depression or hopelessness. However, the help-negation effect of suicidal ideation was greater among participants with high levels of depression. Moreover, high levels of depressive symptoms and hopelessness were also significantly associated with decreased intentions to seek help from family, friends, and mental health professionals. The presence of suicidal ideation or severe symptoms of depression each triggered the Cycle of Avoidance, and impeded symptom appraisal and other psycho-emotional processes necessary for appropriate help-seeking (Biddle et al., 2007; Wilson & Deane, 2010).

   Symptom appraisal and emotional competence. Before deciding to seek help for distressing psychological symptoms such as depression, the individual must first be able to appraise the severity of their symptoms (Scott & Walter, 2010; Scott et al., 2013). As noted by Biddle et al. (2007), help avoidance involves a process of self-diagnosis and symptoms appraisal that qualifies symptoms as normal despite increasing distress. Ciarrochi et al. (2003) define emotional competence as the ability to describe, express and manage emotions. Like emotional intelligence, emotional competence centers on the person's ability to perceive, process, regulate and use emotional information (Ciarrochi et

al., 2003; Mikolajczak, Nelis, Hansenne, & Quoidbach, 2008; Noorbakhsh, Besharat, &

Zarei, 2010). This ability to regulate affect and utilize emotional cues effectively has

been linked to improved health behaviors, adaptive coping, and improved ability to

manage stressful situations (Mikolajczak et al., 2008; Saklofske et al., 2007; Saklofske,

Austin, Mastoras, Beaton, & Osborne, 2012). A recent study of 413 undergraduate

students linked emotion appraisal, regulation and utilization with approach coping styles,

including problem-solving and positive emotional-focused coping (Noorbakhsh et al.,

2010). In other words, an individual's ability to understand, manage and use their

emotions to facilitate cognitive and behavioral activities is related to effective coping

skills. Conversely, Noorbakhsh et al. (2010) found low scores on emotion regulation and

utilization were associated with avoidance coping.

Help-seeking for mental and emotional problems is a form of adaptive coping

approach, and emotional competence is associated with increased intentions to seek help

(Rickwood et al., 2007). Alternately, the inability to identify and describe emotions can

impede help-seeking (Komiya, Good, & Sherrod, 2000; Vogel, Wester, Wei, & Boysen,

2005). Komiya et al. (2000) studied the effect of emotional orientation on attitudes

toward seeking professional help. In a sample of undergraduate students in an

introduction to psychology class (n = 311), the study found positive emotional orientation

(comfort with emotions and a tendency to seek emotional experiences) was a significant

predictor of positive attitudes toward seeking professional psychological help. On the

other hand, a closed emotional orientation, noted by a tendency to avoid emotions was a

significant predictor of reluctance to seek help. Individuals who were uncomfortable with

emotional content were also more likely to perceive stigma in relation to seeking

professional psychological help (Komiya et al., 2000). Vogel and Wester (2003) also found a relationship between emotional competence and intentions to seek help for psychological distress. Among a sample of psychology students at a large Midwestern U.S. university, the study found fear of disclosure of emotional content was a primary deterrent to seeking professional help for psychological distress. For individuals not comfortable with sharing emotional information, fear of the risk of self-disclosure will prevent them from seeking help (Vogel & Wester, 2003). Low levels of emotional competence may contribute to help-avoidance for severe symptoms such as suicidal ideation.

Studies have shown a positive relationship with emotional competence and intention to seek help for depression and suicidal ideation (Ciarrochi et al., 2003). Ciarrochi and Deane (2001) studied the relationship between emotional competence and intentions to seek help for suicidal ideation. The study sampled 300 first year psychology university students for self-report information on their emotional competence, hopelessness, and intentions to seek help (using the General Help-Seeking Questionnaire). Emotional competence was associated with past help-seeking behavior, and previous help seeking experiences were associated with intentions to seek professional help for both emotional problems and suicidal ideation. Participants who scored high in ability to manage their emotions were most likely to seek help for emotional problems and suicidal ideation from various sources (Ciarrochi & Deane, 2001).

Self-disclosure. Although emotional competence can facilitate help-seeking, exposure to stress and adversity can impede an individual's ability to use emotional

experiences to cope, problem solve, and engage cognitive resources. In considering the option to seek help, individuals weigh the risks and benefits of disclosing emotions against the potential benefit of that disclosure (Vogel, Wade, & Hackler, 2008). Trauma exposure, especially in early childhood, may block emotional experiencing and heighten the fear response to the possibility of having to share emotional information with others (Teicher et al., 2003). Vogel et al. (2005) studied the effect of experiencing a distressing event on help-seeking behavior. The study collected data in two rounds with a sample of university students (n = 1,128). The first round collected surveys on 1) comfort with self-disclosure, 2) anticipated utility and anticipated risk of emotional disclosure in seeking help from a counselor, and 3) exposure to a psychological stressor (yes/no question: "Have you ever suffered from severe or serious trauma, abuse or loss in your life (e.g., was physically abused by parents as a child; lost your mother in the young age; was sexually abused; witnessed a murder, etc.)?" (Vogel et al., 2005, p. 466). Participants were then contacted again two to three months after the initial survey for the second round of data collection and asked if they had sought counseling or psychological treatment since the first survey. A total of 617 participants (54.7%) answered both rounds of data collection. Of the 617 individuals who participated in both rounds of data collection, 10.4% (n=64) had sought psychological help, and 16.9% (n = 104) reported experiencing a distressing event. The study found no significant association between seeking help and experiencing a distressing event. However, individuals who had experienced a significant stressor were more likely to consider anticipated risks of seeking help than individuals without exposure to a stressor. The study showed fear of the anticipated outcomes of expressing emotion was a significant factor in the decision to

seek help among individuals with exposure to a distressing event. Concerns about the

benefits of treatment weighed against the risks of emotional disclosure are significantly

affected by previous traumatic experiences (Vogel et al., 2005). The study had limitations

(limited diversity in the sample, broad definition of exposure to a distressing event), but

does indicate a negative relationship between exposure to CA and help-seeking behavior.

Emotional support is one factor associated in the literature with facilitating help-seeking,

social support is another. However, as with emotional competence, exposure to childhood

trauma can affect the social relationships and trust needed to seek help.

   Social support as an enabling factor. The concept of social support arose from

research on the detrimental effects of stress on health (Colman et al., 2014; Pearlin et al.,

2005; Thoits, 1982; 1995). Social support is defined as a psychosocial resource that

encompasses emotional, functional and instrumental functions performed for the

individual by significant others (Thoits, 1995, 2011; Turner & Turner, 2005). It is

conceptualized either as perceived support or received support, where received support is

the observable helping behavior of another and perceived support is the general

expectation that help will be provided to the individual when needed (Ditzen &

Heinrichs, 2014; Thoits, 1995). Research studies have shown perceived support to a

stronger moderating effect on health and mental health outcomes than actual received

support (Ditzen & Heinrichs, 2014; McDowell & Serovich, 2007; Sarason, Sarason,

Shearin, & Pierce, 1987; Thoits, 2011; Wang et al., 2014; Zimet, Powell, Farley,

Werkman, & Berkoff, 1990). Though difficult to test under experimental conditions,

Bolger, Zuckerman and Kessler (2000) used a daily diary design to study the in vivo

moderating effect of perceived versus actual support on couples facing a major stressor.

The study concluded that perceived support was superior to received support in decreasing symptoms of depression.

There is strong evidence linking social support with improved physiological health (Kawachi & Berkman, 2001; Uchino, Uno, & Holt-Lunstad, 1999). Ditzen and Heinrichs' (2014) review found the buffering effects of social support against stress in addition to its positive role in health behavior across the life course. For example, a meta-analysis by Uchino, Cacioppo and Kiecolt-Glaser (1996) presents a comprehensive review of the evidence linking social support to cardiovascular, endocrine, and immune system functioning. A proposed mechanism of action for the benefits of social support is theorized in the literature as the stress-buffering model, which posits social support moderates the effect of stress on health and mental health outcomes (Kawachi & Berkman, 2001; Wang, Cai, Qian, & Peng, 2014). The stress-buffering effects of social support on both physiological and psychological processes is shown in two recent studies (Horan & Widom, 2015; Sperry & Widom, 2013). Both studies were based on a data set from a prospective cohort design study where a group of abused and neglected participants were matched with non-abused/neglected controls from childhood through adulthood. The first study showed social support to have a moderating effect on the direct relationship between childhood abuse and anxiety, depression, and illicit drug use in adulthood (Sperry & Widom, 2013). The second study sought to determine 1) if exposure to childhood abuse and neglect impacts levels of perceived social support in adulthood; and 2) if social support mediates the relationship between childhood abuse and neglect and allostatic load in middle adulthood (Horan & Widom, 2015). The authors found adults with exposure to child abuse and neglect were less likely to report having close

relationships, reported lower levels of perceived support from partners, as well as lower

levels of perceived general support. Moreover, low social support was associated with

significantly higher allostatic load. Finally, though exposure to childhood abuse and

neglect was significantly associated with higher allostatic load, social support was shown

to be a mediator in this relationship (Horan & Widom, 2015).

Consistent with Horan and Widom's (2015) finding that social support can

mediate the adverse effects of CA across the lifespan, other studies have shown social

support promotes positive health behaviors such as help-seeking (Berkman, 1995; Thoits,

2011; Uchino et al., 1999). Recent studies show social support is positively correlated

with help-seeking and increased mental health service utilization (Fleury et al., 2014;

Riosa et al., 2015; Schomerus et al., 2013). In a non-clinical sample of US college

students, higher levels of social support were correlated with increased likelihood of

seeking help (Yakunina et al., 2010). Population studies have shown a correlation

between social support and help-seeking for mental health reasons (Fleury et al., 2014).

A person's social network can facilitate help seeking in various ways—by

providing established trust relationships, by prompting the person to seek-help, aiding in

recognition of symptoms, and creating positive outcome expectations for treatment

(Thomas et al., 2014; Vogel, Wade, Wester, et al., 2007). Trusted family, friends and

community members take on the role of gatekeeper—assisting the individual to access

appropriate sources of support (Rickwood et al., 2005). In a study with participants (n =

2,737) from rural and underserved high schools in North Dakota and New York state,

Pisani et al. (2012) found a significant correlation between perceived social support and

help-seeking behavior. Analysis of help-seeking among the subset of participants (n =

381) who reported suicidal ideation and/or attempts in the previous 12 months, yielded

the following results: although 29.4% of participants with suicidal ideation reported

trying to get help, only 15.1% met criteria for help-seeking behavior as operationalized in

the study (both disclosing suicidal ideation to an adult and perceiving oneself as trying to

get help). The study found predictors of help-seeking included positive social

connections, as evidenced by school engagement and perceptions that adults could

provide necessary help, and perceived social support for coping with distressing

symptoms (Pisani et al., 2012).

Pisani et al.'s (2012) conceptualization of help-seeking as a two-step process

involving both self-disclosure and intention to seek help supports the how coping and

attachment styles may influence help-seeking. Self-disclosure may be a critical

antecedent to help-seeking, though willingness self-disclosure is associated with

approach-focused coping (Pisani et al., 2012; Vogel & Wester, 2003). In fact, as with

avoidant versus approach coping styles, Vogel and Wei (2005) found attachment styles

can influence help-seeking intentions and perceptions of social support. In their study,

both anxious and avoidant attachment styles were associated with lower perceived social

support than controls (Vogel & Wei, 2005). And consistent with the literature on coping,

Vogel and Wei's (2005) study showed individuals with avoidant attachment styles were

least likely to endorse intentions to seek help for psychological distress. In a follow-up

study, Shaffer, Vogel and Wei (2006) found avoidant attachment styles mediated the

relationship between avoidance and decreased intentions to seek help through lower

anticipated benefits of counseling and higher anticipated risks. Overall, avoidant

attachment influences a person's perception of the available social support, and of the

risks and benefits of counseling (Shaffer et al., 2006; Vogel & Wei, 2005). Exposure to

CA and cumulative stress across the lifespan is associated with avoidant coping styles

and social withdrawal which can lead to decreased intentions to seek help when needed

(Leitenberg et al., 2004; Liang, Goodman, Tummala-Narra, & Weintraub, 2005). The

following section details the research on exposure to adversity and help-seeking.

Exposure to childhood adversity and help-seeking. Research indicates

exposure to CA is linked with help-avoidance (Garnefski et al., 2001; Leitenberg et al.,

2004). Cumulative stress and childhood trauma hamper enabling factors such as

emotional competence, symptom appraisal, and social support. For example, neurological

changes stemming from childhood trauma can impede a person's ability to appropriately

appraise their psychological symptoms (Heim et al., 2008; Newman et al., 2000), and to

form trusting social connections to enable help-seeking (Schreiber et al., 2010; Willis et

al., 2014). Adverse childhood experiences have been linked with personality factors

associated with avoidant coping styles, such as neuroticism (Carver & Connor-Smith,

2010; Mc Elroy & Hevey, 2014), and lower problem-focused or approach coping styles

associated with help-seeking (Briere & Rickards, 2007; Josefsson et al., 2013; Sudbrack,

Manfro, Kuhn, de Carvalho, & Lara, 2015). Also, child abuse or neglect may form

cognitive schema that seeking help will be futile, or worse, dangerous. Many people from

neglectful or abusive conditions have had discouraging experiences with seeking help,

both in childhood and from formal helpers (e.g. social service agencies, which can be

oppressive and disempowering, replicating dynamics from early dysfunctional families).

Finally, Those with abusive childhoods may fear authority figures, and this may be

projected onto professional helpers such as doctors, therapists, and social workers

(Levenson, 2017). For these reasons, as well as the empirical evidence on the effects of CA on adult coping, wellbeing, and mental health more research is needed on the relationship between exposure to CA and help-seeking.

Although both predisposing and enabling characteristics facilitate healthcare utilization, some studies show the strongest predictor of service use is perceived and evaluated need for treatment (Andersen, 1995). Certain studies show only need factors are significantly associated with mental health service use, not predisposing factors such as exposure to childhood adversity alone (Mills, Van Hooff, Baur, & McFarlane, 2012; Schomerus et al., 2013; Stige et al., 2013). For example, studies have shown the relationship between help-seeking intentions and exposure to CA is mediated by current distressing symptoms: Mills et al. (2012) study in a sample of rural Australians who had witnessed a natural disaster examined predictors of mental health utilization. The study found that childhood trauma was associated with increased likelihood of seeking specialized mental health treatment, with the greatest predictor of overall treatment utilization being current psychological distress. The limitations of the study include its lack of a diverse sample and the definition of trauma limited to experiencing a natural disaster (Mills et al., 2012). A recent qualitative study examined adult help-seeking behavior in adults who experienced childhood trauma (Stige et al., 2013). Among a clinical sample (n=13) of women, the study found the help-seeking process following childhood trauma occurred after a period of years and was precipitated by current increased levels of psychological distress. Schomerus et al.'s (2013) population-based study in the Pomerania region of Germany had similar results—severity of depressive symptoms was significantly associated with help-seeking behavior with social support as

a significant mediating factor. Childhood trauma did not have a significant effect on help-seeking behavior (Schomerus et al., 2013). As the sample was from a small region in Germany, it is possible social and/or cultural factors may have influenced attitudes toward seeking help. The authors used Andersen's Socio-Behavioral Model of Health Service use (Andersen & Newman, 2005).

Another study that used the Socio-Behavioral model examined predisposing and enabling factors for mental health service use among impoverished, urban adults exposed to trauma (Ghafoori, Fisher, Koresteleva, & Hong, 2014). The study did not focus on childhood trauma, but instead used the Life Events Checklist (LEC) to determine exposure to a series of 17 common traumatic events such as natural disasters, assault, serious accidents, or a life-threatening illness. The instrument does not specify if the exposure to trauma was during childhood or adulthood. Of the 135 total participants, only 27 (20%) reported receiving mental health services. As with Schomerus et al., (2012), this study showed no significant relationship between trauma exposure and intentions to seek help or mental health utilization (Ghafoori et al., 2014). The study found a positive attitude toward seeking help was the only predisposing factor associated with mental health treatment utilization, and social support was the only enabling factor. Neither age, gender, race, socioeconomic status, level of education, nor frequency of traumas were significantly associated with mental health service use. In addition, only one need factor was significantly associated with mental health service utilization—occupational disability. All other need factors assessed (symptom severity for Post-Traumatic Stress Disorder, depression, anxiety, social disability, or home life disability) were not associated with health service utilization (Ghafoori et al., 2014). The sample was 61%

male, 52% black, 62% earning less than $6,000 per year, and 96% without health insurance. Considering these demographics, the authors posit the lack of association between trauma exposure and mental health service utilization may be related to structural barriers such as inability to afford treatment or transportation issues, or socio-cultural barriers such as stigma, spiritual beliefs or the cumulative effects of racism on attitudes toward seeking help (Ghafoori et al., 2014).

The interaction between childhood adversity, ethnicity and gender. Other studies have shown as with Gonzalez, Alegria, and Prihoda (2005) race and gender interact with attitudes toward help-seeking as predisposing factors toward healthcare utilization. Sabina et al., (2012) studied the role of ethnicity on help-seeking behaviors of a national sample of Latina women. The study examined the help-seeking patterns of a sample (n = 714) of women who had been victimized as adults. The study operationalized victimization with the Lifetime Trauma and Victimization History questionnaire, which assesses interpersonal victimization through a series of incidents. The responses were categorized by age (childhood versus adult exposure) and severity. Help-seeking sources were categorized as either informal or formal sources of help. The study found participants were more likely to seek help from informal rather than formal sources (68.9% versus 32.5%). Regarding victimization type and likelihood of seeking help, participants who had experienced either stalking or childhood victimization were less likely to seek help from any source than participants exposed to any other type of victimization (Sabina et al., 2012a). The authors conclude Latina women are more likely to seek help from informal sources than formal sources, and Latina women exposed to childhood trauma were least likely to seek help from all sources. Sabina et al. (2012) note

unwillingness to disclose childhood victimization and a decreased sense of trust of others

stemming from the victimization itself may create contextual deterrents to help-seeking.

Early exposure to stress and adversity diminishes social and coping-related protective

factors, such as a sense of social connection and approach-type coping, resulting in

decreased social ties, a tendency toward distrust, lower self-esteem, and hopelessness

(Miller et al., 2011).

     Childhood adversity exposure and help-avoidance. Sabina et al. (2012) indicates

that while exposure to CA is associated with increased need for mental health treatment

in adulthood, it is also associated with help avoidance. A qualitative study on men's

experiences of healing from childhood maltreatment provides additional empirical

support this idea (Willis et al., 2014). The study used a hermeneutic phenomenological

research framework to extract meaning from the experiences of 52 male participants who

suffered childhood maltreatment. The study found a prevailing concept termed,

"Dwelling in Suffering," which was defined by personal, interpersonal and

social/environmental factors (Willis et al., 2014, p. 572). On a personal level, the child

maltreatment survivors described patterns of help-avoidance marked by a feeling of

needing to hide behind a mask, inability to recognize the connection between current

distress and childhood abuse, and the use of alcohol, drugs and sex to deal with intense

emotional experiencing (p. 573). Social norms regarding masculinity prevented the

participants from disclosing their internal suffering for fear of rejection (p. 572). Finally,

pathways to healing through seeking help were hampered by lack of trusted relationships,

social isolation, and engaging in abusive relationship: "I've cut myself off so much from

other people and from engagement in the world more generally that it's hard for me to

find support…" (Willis et al., 2014, p. 573). From the men's perspective in Willis et al.
(2014), social norms dictated the need to block internal suffering and develop a mask to
feign normalcy, which in turn blocked the ability to heal from childhood trauma. Healing
from the effects of childhood trauma demands the person risk being vulnerable by
disclosing their experiences and seeking help they need (Harper, Stalker, Palmer, &
Gadbois, 2008; Kennedy et al., 2012).

Though Willis et al. (2014) examined the role of masculinity on healing from
childhood maltreatment, help-avoidance secondary to exposure to childhood trauma may
stem from more than gender experiences. Leitenberg et al. (2004) studied how
undergraduate women (n = 828) coped with stressful events. As with the men in Willis et
al. (2014) study, participants in Leitenberg et al. (2004) who had experienced cumulative
childhood stress (in the form of sexual abuse, physical abuse, witnessing domestic
violence, parental rejection, and growing up with an alcoholic parent) exhibited a
tendency toward social withdrawal and avoidant styles of coping. Participants with
exposure to CA were more likely to avoid their problems, self-criticize and isolate instead
of expressing their emotions and engaging social support (Leitenberg et al., 2004).
Childhood abuse, marked by neglectful, hostile and unsupportive family relationships
provide a foundation for poor social bonding, mistrust of others and limited social
network as the person ages (Horan & Widom, 2015; Repetti et al., 2002).

Conceptual Framework

**The interaction between childhood adversity exposure and attitudes toward
professional help-seeking.** Exposure to CA is associated with suicidality and other
psychiatric symptoms in adulthood, which results in increased health service use. CA also

shapes individual biosocial processes such as coping, emotional competence, self-disclosure, and availability of social resources (Cheng et al., 2015; Ciarrochi & Deane, 2001; Hur, MacGregor, Cherkas, Williams, & Spector, 2012; Reblin, Uchino, & Smith, 2010). For this study, the interaction with CA, psychiatric need (defined as clinically significant depression symptoms), and attitudes toward seeking professional treatment are conceptualized within a Life Course Health Development framework. The relationship between these concepts was organized using the Socio-behavioral model of healthcare utilization (Figure 1). Under that model, exposure to CA is an enabling factor to healthcare utilization, and a mechanism for help-avoidance. Risky family environments in early childhood promote avoidant coping styles, mistrust, and social isolation (Repetti et al., 2002; Sperry & Widom, 2013). As these factors interact across the life course, individuals develop personality traits that undermine emotional and social competence, and increased sensitivity to vulnerability to stress (Compas, Connor-Smith, Saltzman, Thomsen Harding, & Wadsworth, 2001; Mc Elroy & Hevey, 2014)

Risky families and adverse childhood experiences. The Risky Families Model posits family environments that are unresponsive, emotionally withdrawn, and marked by adversity cause children to grow up with psychosocial deficiencies, particularly in the areas of social competence and emotional processing (Repetti et al., 2002). An adverse family environment in childhood disrupts an individual's ability to cope effectively with stressors and social demands as they age. Repetti et al. (2002) note children with exposure to CA have less secure attachment patterns, fewer coping strategies, and are more fearful and emotionally reactive. This deficiency in emotional processing and coping interacts with problems in social functioning and sets the stage for socially

avoidant behavior and increased likelihood of further victimization by others. In adulthood, these children have limited social networks and are less likely to be able to access needed social support (Horan & Widom, 2015; Repetti et al., 2002; Sperry & Widom, 2013).

Figure 1. Conceptual model of the relationship between childhood adversity, psychiatric disorders and help-seeking using the Life Course Health Development Framework
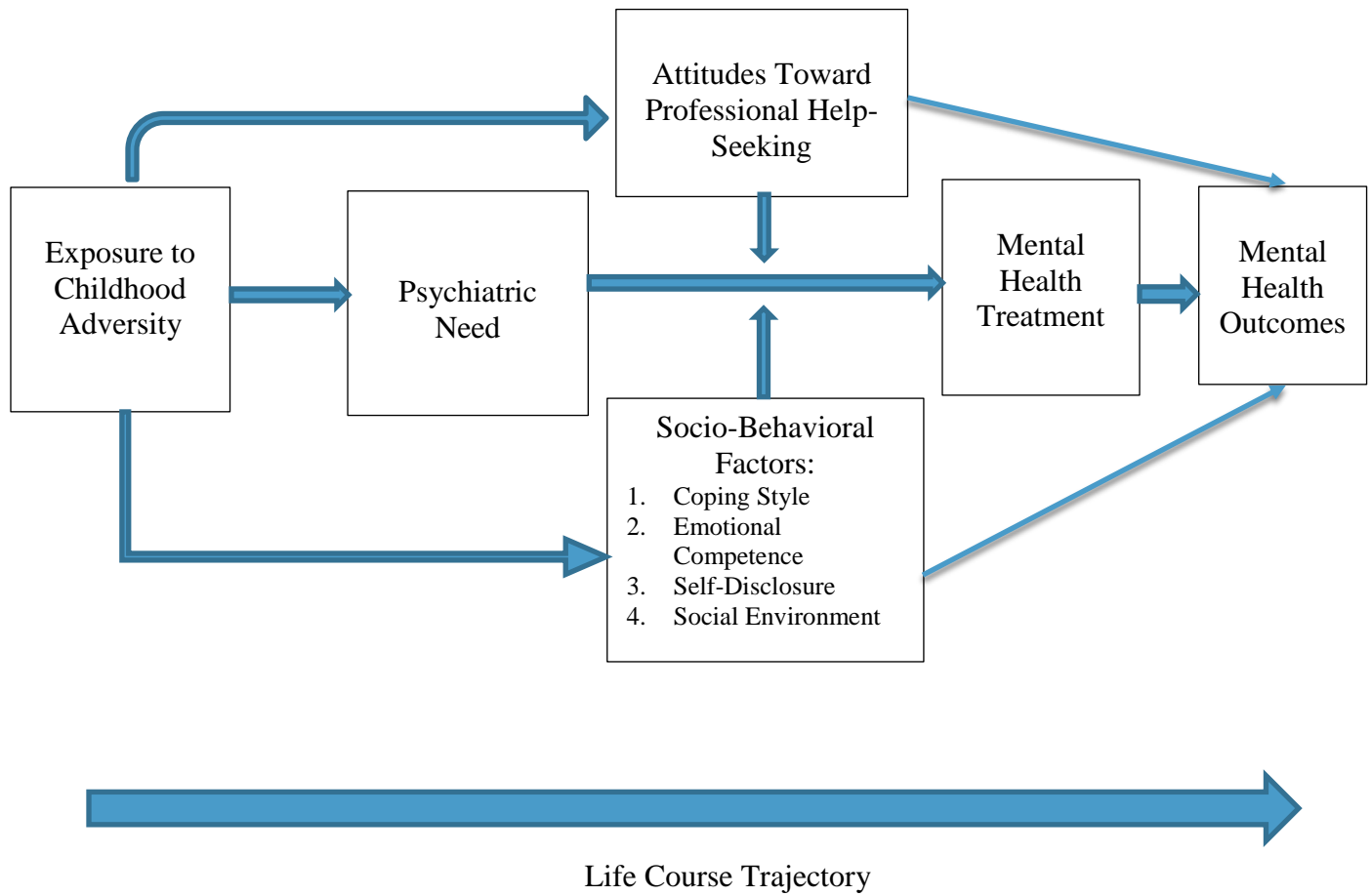
Childhood adversity exposure, personality and coping. A recent cross

sectional study of patients (n = 176) recruited from mental health and addiction treatment

centers found CA was associated with an increase in the number of stressors experienced

in the life course, as well as a lower overall sense of wellbeing (Mc Elroy & Hevey,

2014). The authors also examined the relationship between exposure to CA and

personality traits, emotional intelligence, and coping styles. The study found a significant

inverse relationship between number of ACEs and agreeableness, conscientiousness, and

trait emotional intelligence—indicating a correlation between exposure to CA and

decreased social competence. The study also found a significant direct relationship

between the number of ACEs and neuroticism (Mc Elroy & Hevey, 2014). Neuroticism is

one of the "Big Five" personalities and is correlated with a hyperarousal to threats,

increased moodiness, anxiety, depression, and vulnerability to stress (Carver & Connor-

Smith, 2010). Neuroticism is grounded in an avoidance temperament, and has been

associated with increased risk of developing mood and anxiety disorders, as well as

increased risk of suicide ideation and attempts (Malouff, Thorsteinsson, & Schutte,

2005).

As previously noted in this paper, factors that enable help-seeking include

emotional competence (Ciarrochi & Deane, 2001; Komiya et al., 2000), approach coping

styles (Hunt & Eisenberg, 2010; Roness et al., 2005), and the ability to self-disclose to

members of a trusted social network (Fleury et al., 2014; Riosa et al., 2015; Vogel et al.,

2005; Yakunina et al., 2010). However, CA impedes an individual's ability to develop

the necessary emotional regulation and social competence skills associated with help-

seeking. Instead, unstable, conflict-laden, cold, and unsupportive family environments

"trigger a cascade of psychological vulnerabilities" which compound deficits in

emotional regulation and social competence as the person ages (Miller et al., 2011, p. 14).

Abuse and neglect in childhood predisposes the person to mistrust others, leading to

smaller social networks and a decreased sense of perceived social support (Miller et al.,

2011). This is supported by a series of studies.

For example, Briere and Rickards (2007) explored how trauma and abuse affected

emotional regulation and interpersonal relationships in a general population U.S. sample

(n = 620). The study measured exposure to trauma and adversity using the Traumatic

Events Survey (TES), a self-report survey of a compendium of childhood and adult

interpersonal and environmental traumas. The sample demographics were as follows:

mean age was 49.7 years old (SD = 15.4), 57.8% male, 82.3% white, non-Hispanic, 5.8%

African American, 3.4% Hispanic, 2.9% Asian, and 1.4% Native American. Most the

sample (65.2%) reported exposure to at least one traumatic experience in their lifetime,

with 29.3% reporting childhood physical abuse and 16.8% reporting childhood sexual

abuse (Briere & Rickards, 2007). The study found specific types of CA exposure were

significantly associated with disturbances in self-capacity, defined by the authors as the

ability to 1) maintain a stable sense of identity, 2) regulate emotions, and 3) form and

maintain supportive relationships with others. Specifically, maternal emotional abuse,

lack of paternal emotional support and childhood sexual abuse were significantly

associated with interpersonal conflicts, affect dysregulation, identity impairment and

avoidance coping strategies. Childhood physical abuse was not associated with any

disturbance in self-capacity. In addition, neither adult trauma exposure, nor non-

interpersonal trauma (natural disaster or serious accident) were associated with

dysfunction in any of the areas noted above, indicating childhood is a critical

developmental period where exposure to family stress and adversity lays the groundwork

for future dysfunction (Briere & Rickards, 2007).

Other studies support the finding that childhood trauma exposure can be

detrimental to socialization, emotional competence and social functioning. A cross-

sectional study on the relationship between childhood trauma exposure and personality

on a military sample (n = 242) found a significant relationship between CA and adult

personality factors (Rademaker, Vermetten, Geuze, Muilwijk, & Kleber, 2008). Using the

Temperament and Character Inventory (TCI) to measure personality, the study found a

negative association between childhood trauma and two aspects of personality: self-

directedness and cooperativeness. Low scores on self-directedness and cooperativeness

scales are related to impaired functioning in the areas of impulse control, interpersonal

relationships, and identity stability (Compas et al., 2001; Gladstone et al., 2004;

Rademaker et al., 2008). Moreover, low self-directedness and low cooperativeness are

also associated with avoidant coping and social withdrawal (Ball, Smolin, & Shekhar,

2002; Compas et al., 2001; Rademaker et al., 2008). A longitudinal study in Finland also

used the TCI to assess how the family environment shaped personality development

(Josefsson et al., 2013). Using two points of data collection (years 1983 and 2001) the

authors analyzed the impact of family and home environment factors (maternal

caregiving environment, family SES, parental unhealthy habits and parental role

satisfaction) on personality factors in a cohort of adults. As with Rademaker et al. (2008)

this study found a significant negative relationship between growing up in an adverse

childhood environment (hostile maternal caregiving, parents role dissatisfaction and

unhealthy habits) and self-directedness and cooperativeness in adulthood (Josefsson et

al., 2013). As low scores in these two personality factors are associated with ineffective

coping strategies, poor social skills and decreased emotional competence, the findings

from these studies support the hypothesis that exposure to CA will be associated with

decreased intention to seek help for depression symptoms in adulthood. Childhood

trauma affects a person's ability to recognize emotional cues, makes them more likely to

isolate, and impairs their ability to engage in effective coping—all factors associated with

promoting help-seeking behaviors (Fleury et al., 2014; Gladstone et al., 2004; Komiya et

al., 2000; Roness et al., 2005; Sudbrack et al., 2015).

     This literature review provided the foundation for the present study. From a life

course health perspective, exposure to CA is a significant risk factor for developing

depression in adulthood. Though depression can be effectively treated, to access

treatment, a person must be willing to seek treatment. Help-seeking is a coping behavior

which is a crucial first step to accessing mental health treatment. However, childhood

trauma impedes a person's ability to seek help as it impairs emotion regulation, limits

social support networks and impairs coping mechanisms. There is limited research on the

effect of exposure to CA on the attitudes toward profession help-seeking among adults.

This study addressed the gap in the literature and provided key information on the impact

of early trauma as a potential barrier to mental health treatment utilization. The next

chapter details the methodology for this research study.

CHAPTER 3: Methodology

The purpose of this study was to examine the relationship between CA and attitudes toward professional help-seeking. Through this study, social workers and other mental health professionals may develop trauma-informed approaches to improving access to mental health treatment. Though there is extensive data on the relationship between exposure to childhood adversity and an increased risk for developing psychiatric disorders in adulthood, further research is needed on how those early childhood traumatic experiences affect help-seeking attitudes and behavior among adults (Oral et al., 2016; Stige et al., 2013). The present study used secondary data analysis—from a nationally representative data set—to explore that relationship.

This chapter on methodology describes the rationale for selecting the National Comorbidity Survey Replication (NCS-R) and provides a review of the NCS-R's methodology. This section also presents the research design, data collection strategy, research questions, and the data analysis plan including a discussion of the study variables. The first section begins with a discussion of the research design for this study.

Research Design

This study used a cross-sectional research design to test the associations between exposure to childhood adversity and adult attitudes toward seeking professional mental health treatment. After considering both advantages and limitations of secondary data analysis versus primary data collection, secondary data analysis was selected for this study based on both practical and methodological reasons. Secondary data analysis employs the same empirical research principles as primary data analysis, and can be more time- and cost-effective, while providing access to large, nationally representative

samples (Johnston, 2014; Vartanian, 2011). In addition, using secondary data provides

access to a large number of variables, gathered through rigorous sampling approaches

(Rubin & Babbie, 2014; Vartanian, 2011). These large, nationally representative data sets

collect data on a wide number of variables, often more than can be analyzed by the

original investigators (Clarke & Cossette, 2000; Johnston, 2014). Because the variables in

the secondary data set are already defined by the original study, it is important for a

researcher using secondary data to start with a clear conceptualization of their research

questions based on applied theoretical knowledge (Johnston, 2014).

Once a data set has been identified as potentially viable to the research question,

then it must be evaluated for appropriateness for the research topic (Clarke & Cossette,

2000; Vartanian, 2011). This process includes assessing the original purpose of the study,

analyzing the data collection methods, and reviewing the original study the original

purpose of the study, and to determine goodness of fit with the new research question

(Johnston, 2014; Rubin & Babbie, 2014; Vartanian, 2011). Vartanian (2011) posits that

though secondary data sets have many advantages, the primary disadvantage is the

inability to control and properly frame the survey questions. Therefore, a researcher using

a secondary data set may have access to data that is limited in scope or broader in

definition than necessary (Clarke & Cossette, 2000; Vartanian, 2011). Other limitations

include sample biases, conditions of data collection with the original study, measurement

issues, and limited variables (Clarke & Cossette, 2000; Rubin & Babbie, 2014).

After a review of publicly available data sets including the National Survey on

Drug use and Health, the National Health Interview Survey (NHIS) and the Healthcare

Cost and Utilization Project (HCUP), National Comorbidity Survey Replication was

selected as it contained all the variables related to both help-seeking attitudes and

exposure to childhood adversity. The NCS-R is population-based survey conducted from

2001-2003 among a nationally representative sample (n=9,282) of the US population

(Kessler, Berglund, et al., 2004; Kessler & Merikangas, 2004). The purpose of the NCS-

R was to study the prevalence and correlates of mental disorders in the US. The NCS-R

established nationally representative trends of prevalence of clinically significant mental

disorders (Kessler & Merikangas, 2004). The NCS-R collected data on help-seeking

behaviors and attitudes toward mental health treatment (Gonzalez, Alegria, Prihoda,

Copeland, & Zeber, 2011). Help-seeking behaviors were measured through self-report of

lifetime and past year mental health specialty treatment use, as well as utilization of

general medical care for mental health treatment (Gonzalez et al., 2011; Kessler &

Merikangas, 2004). Gonzalez et al. (2011) note the NCS-R is the largest dataset that

measures attitudes toward mental health treatment, while also including a range of

diagnostic and service utilization variables. Attitudes toward seeking professional mental

health treatment were measured through three questions regarding probability, comfort,

and embarrassment related to help-seeking for mental illness (Jagdeo et al., 2009). A

fourth question assessed the respondent's perceived efficacy of professional mental

health treatment (Gonzalez et al., 2011). The four questions were assessed for

multicollinearity, and were found to measure independent constructs (Gonzalez et al.,

2005, 2011).

In addition, the NCS-R also assessed for exposure to trauma (both childhood and

adult), self-perceived health and level of functioning, substance use, and mental health

treatment utilization (Green et al., 2010; Kessler et al., 2003; Kessler, Berglund, et al.,

2005; Merikangas et al., 2007; P. S. Wang et al., 2005). The NCS-R collected data on

exposure to childhood adversity and trauma through questions assessing exposure to

traumatic events, and specific questions regarding neglect, poverty and exposure to other

risky family environments such as parental depression, anxiety, and incarceration

(Bromet, Sonnega, & Kessler, 1998; Kessler et al., 1997; Kessler, Sonnega, Bromet,

Hughes, & Nelson, 1995). The next section details the background and methods of the

NCS-R.

The NCS-R was selected for the present study for the following reasons: 1) it

provides a large, nationally representative sample of the US population; 2) it provides

data on help-seeking intentions through questions related to attitudes toward seeking

mental health treatment; 3) it provides data on utilization of both specialty mental health

and general medical treatment—thereby providing data on actual help-seeking behavior;

4) it uses diagnostic measures to measure prevalence of a wide range of psychiatric

disorders, which allows for controlling for psychiatric comorbidities while examining

depression; and 5) it provides data on exposure to childhood adversity using a broad

definition which includes exposure to abuse, neglect, and risky family environments. The

following paragraphs expand on the background, aims, and methodology of NCS-R,

highlighting its relevancy to the present study.

The National Comorbidity Survey-Replication

The National Comorbidity Survey Replication (NCS-R), conducted from 2001-2003,

is a nationally representative community household survey of the prevalence and

correlates of mental disorders in the US (Kessler & Merikangas, 2004). The NCS-R was

conducted ten years after the original National Comorbidity Survey (NCS), with the aim

of collecting time trend data in comparison to the baseline NCS data on prevalence of DSM disorders, patterns of service use for these disorders, quality of treatment, and determinants of service utilization (Kessler & Merikangas, 2004). The NCS-R repeats questions from the NCS, and updates diagnostic questions using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994), as the NCS was based on the DSM-III (American Psychiatric Association, 1987).

The background of the NCS-R includes the changes in the mental health treatment landscape that occurred in the US in the 1990s, after the NCS was conducted (Kessler & Merikangas, 2004). In the decade between the two surveys, the rise of managed care and the corresponding mental health carve-outs led to increased mental health treatment utilization (Case, Olfson, Marcus, & Siegel, 2007; Kessler, Demler, et al., 2005; Olfson et al., 2002). Time trend analysis of the NCS versus the NCS-R shows from 1990 to 2003, the prevalence of mental disorders did not change, but the rate of treatment significantly increased. In 1990-1992, one in twelve respondents 18-54 years of age received mental health treatment, while one in five did in 2000-2003 (Kessler, Demler, et al., 2005). Overall, only approximately half of those who received treatment met diagnostic criteria for a mental disorder (Druss et al., 2007; Kessler, Demler, et al., 2005).

Respondents showed time trend increases in utilization in three areas: general medical services, psychiatry services, and other mental health services, and the overall utilization and specific service utilization—general medical versus professional mental health treatment use) were independent of the severity of the disorder and of the sociodemographic characteristics of the respondents (Kessler, Demler, et al., 2005).

Moreover, the NCS to the NCS-R time trend analysis of mental health service utilization shows despite an increase in the rate of treatment, most patients with a mental disorder did not receive treatment (Kessler, Demler, et al., 2005; Mojtabai et al., 2012). Socio-economic trends in managed care, National Institute of Mental Health mental health public education campaigns, improved psychotropic medication, and pharmaceutical direct-to-consumer marketing may account for increase in related service utilization (Anthony, 1993; Goldman, McCulloch, & Sturm, 1998; Grob, 1994; Hogan, 2003). The disparities in need factors versus professional mental health service use shows continued efforts are needed to obtain data on the determinants of treatment utilization in order to increase access to care for people in need (Anthony, 1993; Goldman et al., 1998; Grob, 1994; Hogan, 2003). Therefore, it is imperative to explore other determinants of mental health service use, such as the impact of trauma as examined in the present study.

NCS-R Methods.

Sampling Strategy. The NCS-R was designed to be representative of English-speaking adults ages 18 or older living in the non-institutionalized civilian household population of the coterminous US (excluding Alaska and Hawaii) plus students living in campus group housing with a permanent household address. Respondents were selected in stages to address probability, representativeness, and randomness (Kessler, Berglund, et al., 2004). Data derived from the year 2000 US census was the basis for the study population.

First stage of sampling used the census data to select a probability sample of 62 primary sampling units (PSUs) representative of the population. As one of the aims of the NCS-R was to provide time trend comparisons with the NCS, the 62 PSUs were linked to

the original PSUs used in the NCS to optimize cross-time analysis. Each PSU consisted of all counties in a census-defined metropolitan statistical area (MSA) or, in the case of counties not in an MSA, of individual counties. Primary sampling units were selected with probabilities proportional to size and geographic stratification from all possible segments in the country to maximize the representativeness of the sample. PSUs included self-represented metropolitan areas (New York City, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington DC, Dallas/Fort Worth, Houston, Boston, Nassau-Suffolk NY, St. Louis, Pittsburgh, Baltimore, Minneapolis, and Atlanta), in addition to "non-self-representing" smaller areas of the country selected to provide geographic variation across the US (Kessler, Berglund, et al., 2004, p. 74).

Second stage of sampling divided each PSU into segments of between 50 and 100 housing units based on 2,000 small-area census data resulting in a total of 1,001 area segments selected for the entire sample. The segments were selected systematically from an ordered list with probabilities of selection proportional to size and optimized for geographic variation (Kessler, Berglund, et al., 2004). After selection, an interviewer visited each segment to record addresses of all housing units (HUs) to account for new construction or other changes that may have occurred since the baseline NCS data was collected. In the third stage of sampling, the list of addresses was entered into a centralized computer data file to create a random sample of HUs. This process for selecting sample households prevented interviewers in the field from selectively recruiting respondents from specific neighborhoods (Kessler, Berglund, et al., 2004).

The fourth stage of sample selection started with obtaining a list of all English-speaking household residents 18 years of age and older from a household informant. The

Kish selection grid method was then applied to the list of eligible respondents from the HU to select a primary predesignated respondent. In addition, in a probability sample of households with more than one eligible respondents, a second predesignated respondent was selected to study within-household aggregates of mental disorders. To prevent compromising the response rate for primary respondents, the second predesignated respondent was not selected or interviewed until after the primary respondent was interviewed. The use of the Kish method prevented self-selection bias and the interviewer selecting easy-to-recruit household members (Kessler, Berglund, et al., 2004).

The NCS-R population included college students living away from home. Students were included in the sampling frame if they had a permanent home address— generally their parents' home—as they were included in HU listing in the fourth step of sample selection. When a student was randomly selected from their HU for the interview, the interviewer obtained their contact information at school, and arrangements were made to interview them. Students living in off-campus private housing were selected as any other potential participant with the off-campus residence as the HU (Kessler, Berglund, et al., 2004).

A potential limitation of the study was the extensive length of time of administration. This issue was addressed by evaluating each interview question and skip logic to ensure respondents were skipped off sections as soon as maximum research significance was reached. For example, in the diagnostic sections it was possible to skip respondents once it was clear they failed to meet clinical symptom threshold required for a diagnosis (Kessler, Berglund, et al., 2004). However, the principal investigators were also conscious of maintaining some flexibility in the question skip logic to obtain sub-

threshold diagnostic information. In addition, the survey was administered in two parts, the first assessed for all core World Mental Health Organization-Composite International Diagnostic Interview (WH-CIDI) disorders (Kessler & Ustun, 2004). The second part assessed for correlates to core disorders such as risk factors, consequences, services, etc. of the core disorders and was administered to a smaller probability subsample of respondents rather than to all respondents (Kessler, Berglund, et al., 2004). In addition, respondents who were reluctant to participate were given the option of completing a truncated version of the survey, yielding an additional set of respondents (Kessler, Berglund, et al., 2004). The following section details the sampling strategy results.

 Participants. The sampling strategy yielded 9,282 NCS-R respondents who completed Part I of the survey, and 5,692 who completed Part II, resulting in an over-sampling those with clinically significant psychopathology. The overall response rate of primary respondents was 74.6%, and among secondary respondents, the overall response rate was 83.8% (Kessler, Berglund, et al., 2004). Among the final sample of respondents, all completed Part I, which included all core WH-CIDI disorders and had an administration time averaging 33.8 minutes (inter-quartile range between 22.6 and 39.8 minutes). Part II had a longer administration time (109.4 mean time; inter-quartile range: 83.9—124.1 minutes), due to the inclusion of assessments of risk factors, consequences, services, and other correlates of the core disorders (Kessler, Berglund, et al., 2004). A Part II also included assessments of additional disorders that were either of secondary importance (the NCS-R was used to obtain baseline data on adult attention-deficit/hyperactivity disorder and adult separation anxiety disorder), or that required in-depth assessment (non-affective psychosis, obsessive-compulsive disorder). To reduce

respondent burden and thereby reduce the probability of respondent drop off during the

survey administration, the NCS-R completed Part II based on probability subsamples of

respondents rather than to all respondents (Kessler, Berglund, et al., 2004). Part II was

designed to oversample those with clinically significant psychopathology. Part II was

administered to 5,692 of the 9,282 NCS-R respondents (Kessler, Berglund, et al., 2004).

The unweighted demographic profile of the 9,282 respondents who completed

Part I is: 72.1% non-Hispanic white, 13.3% non-Hispanic black, 9.5% Hispanic, and

5.1% other; 44.6% male, 55.4% female; 57.3% were married, 42.7% unmarried; 75.6%

lived in a metropolitan area; 24.4% lived in a rural area; 34.5% were from the Southern

US, 26.7% Midwest, 20.5% from the West, and 18.4% from the Northeast; 32.7% were

18-24 years old, 30.9% 35-49, 20.7% 50-64, 15.7% 65 and above; 44.9% had less than 12

years of education, 55.1% had 13 years or more (Kessler, Berglund, et al., 2004).

The present study will utilize data from the respondents who completed Part I and

Part II as Part II data has the correlate information needed to examine exposure to CA

and attitudes toward seeking mental health treatment. The demographic profile of the

5,692 respondents who completed both Part I and Part II is: 73.4% non-Hispanic white,

12.6% non-Hispanic black, 9.3% Hispanic, and 4.7% other; 41.8% male, 58.2% female;

56.9% were married, 43.1% unmarried; 76.9% lived in a metropolitan area; 23.1% lived

in a rural area; 32.5% were from the Southern US, 26.7% Midwest, 21.7% from the

West, and 18.3% from the Northeast; 34% were 18-24 years old, 32.2% 35-49, 21.3% 50-

64, 12.5% 65 and above; 45% had less than 12 years of education, 55% had 13 years or

more (Kessler, Berglund, et al., 2004).

   Field procedures. The NCS-R was conducted as a face-to-face survey in the

homes of a nationally representative sample of respondents between February 2001 and

April 2003 administered using laptop computer-assisted personal interview (CAPI)

methods (Kessler, Berglund, et al., 2004). Face-to-face administration was chosen over

telephone, mail, or Internet administration due to the length and complexity of the

interview process, higher response rates, improved properties of the area of probability

sample, and improved accuracy of screening and household enumeration (Kessler,

Berglund, et al., 2004). The Institutional Review Boards of both Harvard Medical School

and the University of Michigan approved the NCS-R's recruitment, consent, and field

procedures.

   The NCS-R employed over 300 professional survey interviewers from the Survey

Research Center (SRC) of the Institute for Social Research at the University of Michigan

to collect survey data. SRC set up teams of interviewers, supervised by regional

supervisors, and supervisors of larger regions reported to team leaders. Finally, a study

manager at the central SRC facility in Michigan provided oversight of the entire team of

supervisors and their staff (Kessler, Berglund, et al., 2004). Prior to data collection, each

SRC interviewer was required to complete a general interviewer training and a training

specific to the NCS-R study. Interviewers were then required to complete a certification

test for the NCS-R which required administering a series of practice interviews.

Moreover, NCS-R interviewers were also trained to monitor respondent fatigue and to

suggest breaks to improve survey completion rates, which resulted in low rates (~ 1%) of

respondents breaking off an interview (Kessler, Berglund, et al., 2004).

Aside from extensive training and ongoing oversight, the NCS-R used additional methods to increase participation, recruitment and retention. For example, SRC interviewers were paid by the hour rather than by the interview. This encouraged interviewers to persist with the interview, especially on the longer interviews required for respondents with extensive histories of psychopathology. For these individuals, interviews were frequently broken up into two or more sessions, spread out over a period of days to weeks to increase retention and decrease drop of rates. In the case of reluctant households, interviewers could make unlimited in-person contact attempts, and received extra financial incentives to complete these interviews during the study close-out period (Kessler, Berglund, et al., 2004).

The study chose laptop computer-assisted personal interview (CAPI) methods instead of paper and pencil administration, which allowed for the use of complex skip logic, which in turn decreased missed entries, inconsistent responses, and possible data entry errors. By controlling skip-logic and monitoring the speed of data entry, the CAPI program deterred the interviewer from skipping sections or entering false data to speed up the interview process (Kessler, Berglund, et al., 2004). CAPI also optimized field quality control by providing real-time tracking at the interviewer level of the number of interviews completed, number outstanding, response rate, and hours per interview. Supervisors would then monitor these statistics and address them with the individual interviewers. Interviewers with data collection issues such as low response or high error rates were either provided additional training or eliminated from the study (Kessler, Berglund, et al., 2004).

Data collection. Once the HU was selected using the first three steps of sample selection, a letter was sent to the household with basic information about the NCS-R: the purpose of the study, answers to frequently asked questions, and a toll-free number for respondents with additional questions. The letter was timed to arrive a few days prior to the interviewer. Once the interviewer made in-person contact with the household, they again explained the study and obtained a household listing. This listing was then used to select a primary respondent in the household. Once a respondent was selected, the interviewer explained the study, and obtained verbal informed consent. Verbal rather than written informed consent was obtained because the NCS-R was designed as a trend study replication of the baseline NCS, which used verbal informed consent. Each respondent also received $50 for participating in the survey (Kessler, Berglund, et al., 2004).

Data collection methods were targeted to enhance response rates and prevent respondent drop-off. Strategies for preventing drop-off included evaluating skip logic and selecting a smaller subsample of participants for the longer Part II interview. Strategies to enhance response rates focused on HUs that were difficult to contact because the residents were unavailable, and respondents who were reluctant to participate once contacted. Interviewers made a minimum of 15 in-person contact attempts at all times of day and all days of the week and left notes at hard to reach HUs that included toll free numbers for residents to schedule interview appointments (Kessler, Berglund, et al., 2004).

Data collection efforts continued until all non-contact HUs had a full series of call and recruitment attempts. A final effort was made for hard-to-recruit cases—the investigators developed a short-form version of the interview and a final in-person

attempt was made to obtain participation using the shortened instrument. Persuasion

letters were then sent to outstanding households that were difficult to contact or reluctant

to participate in the study—offering higher financial incentive ($100) to complete the

shortened version of the survey either in person or on the phone within a 30-day close-out

period. All fieldwork ended at the end of the 30-day period (Kessler, Berglund, et al.,

2004).

   Measures. The World Health Organization (WHO) first developed the Composite

International Diagnostic Interview (CIDI) in 1990 to encourage the collection of

community-based epidemiological survey data around the world (Kessler & Ustun,

2004). The NCS-R diagnostic interview instrument is a version of the CIDI that was

developed for the WHO World Mental Health Survey Initiative; the instrument is referred

to as the WH-CIDI (Kessler & Ustun, 2004). The WH-CIDI expands the CIDI to include

a wider range of assessment areas, and improves the diagnostic operationalization of the

CIDI by including clinical significance criteria from the DSM-IV (Kessler, Abelson, et

al., 2004; Kessler & Ustun, 2004). The aim of the WH-CIDI is twofold: 1) to obtain

information about the prevalence and correlates of mental disorders in the general

population, and 2) to obtain information about unmet need for treatment, treatment

adequacy among patients, and the associated societal burden of mental disorders (Kessler

& Ustun, 2004).

   Survey design. The NCS-R also included additional supplemental sections unique

to the US version of the survey. As discussed earlier, the wide scope of the survey

instrument necessitated a lengthy interview which had implications for survey design and

field procedures. In total, the NCS-R took a minimum of 90 minutes to complete among

respondents who reported no lifetime disorders, an average of approximately 2 hours and

30 minutes among people with a history of disorder, and as long as 5 to 6 hours among

respondents with a complex history of many different disorders (Kessler, Berglund, et al.,

2004; Kessler & Ustun, 2004). To minimize respondent burden, the NCS-R was divided

into two parts: Part I—administered to all respondents—included all core WH-CIDI

disorders; and Part II—administered to a 30% subsample—included supplemental

subsections which assessed risk factors, consequences, services, and other correlates of

the core disorders, such as self-reported psychological distress, as well as exploratory

questions on additional disorders (Kessler & Ustun, 2004).

Other methodological issues addressed in the design of the WH-CIDI include

wording of questions, prompts and ordering of survey sections to increase the validity

and reliability of the instrument. For example, issues related to question comprehension,

task comprehension, and motivation to increase the chances that respondents will answer

completely and accurately, were addressed by the WH-CIDI survey designers through a

series of pilot studies which included debriefing interviews with community respondents

(Kessler, Abelson, et al., 2004; Kessler & Ustun, 2004). The instrument design also

embedded motivational enhancement techniques to encourage respondents to stay

actively engaged in demanding and potentially demanding recall tasks (Kessler & Ustun,

2004). These techniques include motivational instructions, contingent reinforcement, and

commitment questions. The complexity of the instrument design and administration

required special attention to interviewer training. Aside from developing the instrument,

the developers also created comprehensive training materials for interviewers to learn to

administer the WH-CIDI, and for supervisors to learn to monitor the quality of the data

collected (Kessler & Ustun, 2004). The training for the NCS-R interviewers and supervisors was described in the field procedures section above. Finally, in addition to developing the instrument and the training program, the WH-CIDI team also developed a computer assisted version of the interview and developed programming to generate diagnoses from completed survey data using both the DSM-IV and the ICD-10 (Kessler, Abelson, et al., 2004; Kessler & Ustun, 2004). Next is a discussion of the different sections of the WH-CIDI.

Lifetime review. The first section of the WH-CIDI is an introductory screening that includes a life review section designed to obtain lifetime diagnostic symptom information. The question stems prompt and facilitate respondent active memory engagement in answering diagnostic stem questions. This section acknowledges the questions may be difficult to answer and uses reinforcing motivational probes to encourage accuracy (Kessler & Ustun, 2004).

Diagnostic sections. The WH-CIDI then proceeds to 22 diagnostic sections that assess mood disorders (Major Depression, Mania), anxiety disorders (Panic Disorder, Specific Phobia, Agoraphobia, Generalized Anxiety Disorder, Social Phobia, Post-Traumatic Stress Disorder, Obsessive-Compulsive Disorder), substance use disorders (Alcohol Abuse, Alcohol Dependence, Drug Abuse, Drug Dependence, Nicotine Dependence), childhood disorders (Attention-Deficit/Hyperactivity Disorder, Oppositional-Defiant Disorder, Conduct Disorder, Separation Anxiety Disorder), and others (Intermittent Explosive Disorder, Eating Disorders, Premenstrual Disorder, Non-Affective Psychoses Screen, Pathological Gambling, Neurasthenia, Personality Disorders Screens). As noted previously, to reduce respondent burden, the interview was broken up

into two parts, with the core disorder questions in Part I and other disorders explored in

Part II (i.e. Substance Use Disorders, Post-Traumatic Stress Disorder, Obsessive-

Compulsive Disorder, Intermittent Explosive Disorder, Eating Disorders, Premenstrual

Disorder, Non-Affective Psychoses Screen, Pathological Gambling, Neurasthenia,

Personality Disorders Screens) (Kessler, Berglund, et al., 2004; Kessler & Ustun, 2004).

Overall, the emphasis on the diagnostic sections is to explore a continuum of

threshold and sub-threshold diagnostic information to obtain the widest range of

clinically relevant data (Kessler, Abelson, et al., 2004; Kessler & Ustun, 2004). Questions

in the diagnostic sections also address symptom persistence and severity, and both

lifetime and 12-month prevalence of symptomatology. Finally, the WH-CIDI asks

explicit questions about the level of distress experienced secondary to the disorder in both

sub-threshold cases and for respondents who report experiencing symptoms in the past 12

months (Kessler & Ustun, 2004; Moussavi et al., 2007).

Comorbidity and functioning. The WH-CIDI obtains clinical information on

functioning and physical disorder comorbidity. This section asks questions regarding

suicidality, 30-day functioning, 30-day psychological distress, physical comorbidity

(Kessler & Ustun, 2004). Questions center on perceptions of both internal and external

impairment. Internal impairment includes impairment in household duties, employment,

social life, and personal relationships. This section also asks the respondent to estimate

the total number of days out of the past 12 months they were unable to work or carry out

their usual activities because of the disorder (Kessler & Ustun, 2004). External

impairment is measured as 30-day functioning and is made up of questions from the

WHO Disability Assessment Scale (WHO-DAS), which measures both persistence

(number of days) and severity during the days when functioning was impaired. Finally, this section asks about the lifetime occurrence, age of onset and most recent presentation of a checklist of chronic health conditions (Kessler & Ustun, 2004).

Part II sections: As noted previously, to reduce respondent burden due to the lengthy administration time of the instrument, it was broken up into two parts. The WH-CIDI used a case-control approach so only a sub-sample of respondents who complete the first half of the interview (Part I)—which includes the core diagnostic assessments—and who report no lifetime history of disorder are terminated at Part I. At that halfway point, all respondents who meet criteria for any lifetime mental disorders (in the Part I interview), are retained to complete Part II of the interview (Kessler & Ustun, 2004).

As the developers sought to expand the WH-CIDI beyond its initial focus on diagnoses, Part II includes assessments of risk factors, consequences, and treatment. Part II includes 14 sections that focus on socio-demographics (employment, finances, marriage, children, childhood demographics, adult demographics), treatment services, pharmacotherapy, risk factors, personality, social networks, childhood experiences, and family burden (Kessler & Ustun, 2004). Kessler and Ustun (2004) also note Part II includes the diagnostic sections for assessments of substance use disorders, post-traumatic stress disorder, obsessive-compulsive disorder, and non-affective psychosis. Other diagnostic assessments in Part II are eating disorders, neurasthenia, nicotine dependence, pathological gambling, premenstrual disorder, and a screen for personality disorders.

The WH-CIDI collects socio-demographic information as with all epidemiological surveys, as age, sex, race, education, marital status, and employment

status. However, it also seeks to assess dynamic versus cross-sectional demographic data.

As demographics such as marital status and employment status change over time,

separate sections of the interview ask about the respondent's history in each of the three

main areas of achieved social status -- employment, marriage, and childbearing.

Questions center about the age at first marriage, employment, sexual intercourse.

Information is also gathered on role history (e.g. number of times married and duration of

each marriage, stability of employment history).

Three additional socio-demographic sections—childhood demographics, adult

demographics, and finances—also seek to obtain in-depth information not usually found

in most surveys. The childhood demographics asks about birth order, marital status of

parents, country of origin and age at immigration for people who were originally from

another country, native tongue, education, childhood religion and religiosity, urbanicity

of childhood residence, and stability of childhood residence. The section on adult

demographics asks detailed questions about parents, if they are living or dead, age and

cause of death of each deceased parent, race-ethnicity, "subjective closeness of racial-

ethnic identification, citizenship, religious preference, religiosity, amount of time during

adulthood when the respondent was in a jail or prison or correctional facility, amount of

time homeless, amount of time institutionalized in a hospital or nursing home, and

current subjective social class position" (Kessler & Ustun, 2004, p. 108).

Treatment and pharmacotherapy. Treatment need, like impairment, is assessed in

the WH-CIDI both subjectively and objectively. The WH-CIDI asks respondents at the

end of the diagnostic section if they ever sought professional treatment for that disorder

and, if so, at what age they first sought treatment. Additional questions ask about the

perceived helpfulness of that treatment and the number of professionals they saw before

receiving helpful treatment. This information is gathered to determine delays in treatment

after onset of symptoms. For respondents who endorse never having received helpful

treatment, additional questions center on the total number of professionals seen for

treatment of their disorder.

To assess treatment utilization patterns further, the WH-CIDI also asks

respondents about ever having treatment for problems with their emotions or mental

health. A separate section asks parallel questions about seeking help for problems

associated with the use of alcohol or drugs (Kessler & Ustun, 2004). The interview also

collects data on both inpatient and outpatient treatment utilization. Questions about

inpatient treatment ask about history of lifetime hospitalization, age of first

hospitalization, number of lifetime hospitalizations, amount of time spent in hospitals for

these problems over the life course, and hospitalization in the past 12 months. Questions

about outpatient treatment include asking about receiving treatment from each of a wide

range of professionals. For each type of professional seen, information is recorded on age

of first receiving treatment and age of most recent treatment (Kessler & Ustun, 2004).

As changes in the quality, availability and marketing strategies for psychotropic

medications were evident in the decade between the NCS and the NCS-R, the WH-CIDI

sought to obtain distinct data on pharmacotherapy utilization. This section "asks about

the use of prescription and non-prescription medications in the past 12 months for

'problems with your emotions, nerves, mental health, substance use, energy,

concentration, sleep, or ability to cope with stress'(Kessler & Ustun, 2004, p. 109)." The

respondent booklet includes a comprehensive list of prescription medications which is

provided as a visual aid to answer these questions.

     Childhood experiences. The WH-CIDI section on childhood experiences was

designed to collect epidemiological data on the lifetime effects of traumatic life

experiences, in particular the long-term effects of exposure to childhood adversities

(Kessler & Ustun, 2004). For this reason, the WH-CIDI includes an extensive section on

childhood experiences. This is separated into two sections: first, questions about

childhood traumatic events are included in the trauma checklist within the PTSD section.

Second, additional questions are included in a separate section on childhood experiences.

This section asks if the respondent lived with both of his or her biological parents until

age 16 and, if not, to provide further information about their living situation up to that

age. The survey also asks if a parent was ever away from home for six months or longer

due to such things as hospitalization, imprisonment, or military service (Kessler & Ustun,

2004).

     The WH-CIDI uses a modified version of the Conflict Tactics Scale (Straus,

Hamby, Boney-McCoy, & Sugarman, 1996; Straus, Hamby, Finkelhor, Moore, &

Runyan, 1998) to assess for physical abuse and parental violence towards the respondent

during the respondent's childhood. The interview also asks questions about neglect and

sexual abuse (Kessler & Ustun, 2004). The quality of the family environment during the

respondent's childhood is assessed through questions regarding parent education,

employment status, occupation if they were employed, and the stability of their

employment during the respondent's childhood. Finally, the interview assesses parental

psychopathology during the respondent's childhood using a modified version of the

Family History Research Diagnostic Criteria Interview (Andreasen, Endicott, Spitzer, & Winokur, 1977). Parental disorders are assessed separately in the areas of parental depression, panic disorder, GAD, substance use disorder, and antisocial personality disorder (Kessler & Ustun, 2004). A detailed table of all variables from the NCS-R used in the present study can be found in Table 1. The next section focuses on the present study, beginning with its research questions and hypotheses.

Present Study Research Questions and Corresponding Hypotheses

The relationship between personal attitudes, intention and behavior has been studied within the context of constructs such as physical activity and health-risk behaviors (Norman & Conner, 2005; Turchik & Gidycz, 2012). Personal attitudes toward seeking mental health treatment drive health behaviors and shape decisions regarding engaging in treatment (Babitsch et al., 2012; Scott et al., 2013; Thomas et al., 2014). Attitudes toward seeking mental health treatment can be a mediating factor between perceiving a need for treatment, and engaging in care (Rüsch, Heekeren, et al., 2013; Vogel, Wade, & Hackler, 2007). Attitudes and personal beliefs are shaped by a person's social environment and can be affected by exposure to trauma (Palmer, Brown, Rae-grant, & Loughlin, 2001; Stige et al., 2013), which can in turn affect a person's willingness to seek professional mental health treatment when it is necessary.

This study focused on exploring the relationship between exposure to childhood adversity and personal attitudes toward help-seeking for emotional problems in adulthood. Using data from a nationally representative sample, the present study sought to better understand how adverse childhood experiences influence the likelihood of a person seeking mental health treatment based on their attitudes toward treatment,

including their level of comfort about disclosing personal information, and perceived social stigma associated with receiving professional treatment. The hypotheses and research questions for the present study were developed based on a review of the empirical evidence noting childhood adversity is associated with help-avoidance (Leitenberg et al., 2004; Sabina et al., 2012a), mistrust of others and decreased level of comfort with self-disclosure (Teicher et al., 2003; Vogel, Wester, et al., 2007; Willis et al., 2014), and increased perceived social stigma over seeking help (Cheng et al., 2015; Sabina, Cuevas, & Schally, 2012b; Stige et al., 2013; Willis et al., 2014).

Research Questions

The study will explore the following research questions:

1. Is there a significant dose-respondent relationship between exposure to childhood adversity (as measured by ACE score) and help-seeking intentions (as measured by probability of seeking professional treatment for a serious emotional problem)?

    H_0: There is no statistically significant relationship between exposure to childhood adversity and help-seeking intentions.

    H_1: Exposure to childhood adversity will be inversely associated with help-seeking intentions.

2. Is there a significant dose-respondent relationship between exposure to childhood adversity (as measured by ACE score) and level of comfort with self-disclosure to a professional (as measured by level of comfort with talking about personal problems to a professional)?

H_0: There is no statistically significant relationship between exposure to childhood adversity and level of comfort with self-disclosure to a professional.

H_1: Exposure to childhood adversity will be inversely associated with level of comfort with self-disclosure to a professional.

3. Is there a significant dose-respondent relationship between exposure to childhood adversity (as measured by ACE score) and level of perceived social stigma from getting professional help for emotional problems (as measured by level of embarrassment felt if friends knew the respondent was getting professional help)?

H_0: There is no statistically significant relationship between exposure to childhood adversity and level of perceived social stigma from getting professional help.

H_1: Exposure to childhood adversity will have a positive association with level of perceived social stigma from getting professional help.

Additional exploratory questions include:

a. Is there a relationship between predisposing factors (gender, age, race/ethnicity, marital status and educational level) and attitudes toward seeking professional help?

b. Is there relationship between enabling/impeding factors (health insurance status, financial security, treatment history and past suicidal behavior) and attitudes toward seeking professional help?

c. Is there relationship between psychiatric need factors (depression, bipolar disorder, anxiety disorder and substance use disorder) and attitudes toward seeking professional help?

Data Collection

The data for this study was collected from a secondary data source—the National Comorbidity Survey Replication (NCS-R). The NCS-R is part of the Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003 data set, and is accessible through the Inter-university Consortium for Political and Social Research (ICPSR). ICPSR is an international consortium of more than 750 academic institutions and research organizations with a data archive of over 250,000 files of social and behavioral sciences research (Inter-university Consortium for Political and Social Research, 2018a). ICPSR provides training, data access, curation, and methods of analysis in fields such as education, substance abuse, criminal justice, aging.

The CPES studies were designed to gather data on the prevalence of mental disorders, related impairments, and treatment patterns from representative samples of majority and minority adult populations in the United States. In addition, the surveys aimed to explore the association between mental health disorders and socio-cultural issues by collecting data on factors such as language use and ethnic disparities, support systems, discrimination and assimilation (Inter-university Consortium for Political and Social Research, 2018a). CPES joins together three nationally representative surveys: the NCS-R, the National Survey of American Life (NSAL), and the National Latino and Asian American Study (NLAAS). By joining these three surveys CPES allows researchers to analyze the combined dataset as though it were a single, nationally representative survey. The present study focused on the NCS-R data set only, however, the breadth of the data contained in the CPES lends itself to future applications that can focus on marginalized populations.

The majority of ICPSR data sets are public-use files with no restrictions on access beyond the standard Terms of Use. However, some data sets include restricted-use versions containing sensitive data (Inter-university Consortium for Political and Social Research, 2018b). These restricted data sets are available to verified researchers who successfully complete the application process, and who have agreed in writing to abide by rules assuring that respondent confidentiality is maintained. The ICPSR prohibits any use of restricted data other than for statistical reporting and analysis.

The present study requires the use of a restricted version of the NCS-R as the variables related to childhood sexual abuse are part of the restricted data set. These variables are necessary for a comprehensive assessment of exposure to childhood adversity. Therefore, the researcher used the following procedure to obtain access to the restricted data necessary for the study:

1. The researcher obtained approval for the research project, "The Relationship Between Childhood Adversity and Attitudes Toward Professional Help-seeking" from the Barry University Institutional Review Board, Miami Shores, FL on March 1, 2018, under protocol number 1182754-1 (Appendix B).

2. The researcher completed an online application process through the ICPSR web portal (https://www.icpsr.umich.edu/rpxlogin).

3. The researcher completed the "Application for Restricted-Use Data" electronically by providing information about the investigator and a description of the proposed research—Exposure to Childhood Adversity and Attitudes Toward Seeking Professional Help. The description of the

project included the rationale for the need to access restricted-use data,

information on data formats needed and data-storage technology, proof of

exemption for the research project from Barry University's Institutional

Review Board (Appendix C).

4. The researcher completed submitted a "Confidential Data Security Plan"

    detailing how the researcher will ensure the restricted-use data is securely

    stored and accessible only to the people listed in the application. The

    application includes three research staff: Jill Levenson, Heidi LaPorte and

    Claudia Vicencio (See Appendix B: ICPSR Application for Restricted Use

    Data, for a copy of the complete application). The application also

    includes a "Restricted Data Use Agreement." Since this is a legal

    agreement between the University of Michigan and Barry University

    specifying the terms of the use of the restricted-use data, after obtaining

    project approval from Barry University's Institutional Review Board, the

    researcher submitted the Restricted Data Use Agreement to Barry's Legal

    Affairs Department for review, and then to the University Provost for

    signature. Once signed, the researcher uploaded the agreement to the

    ICPSR restricted data application web portal (Appendix D).

5. With all the elements of the application complete, the researcher submitted

    the application. Once the application was received by the ICPSR staff,

    they sent a link via email to the "Pledge of Confidentiality" to the three

    research staff listed in the application. Each research staff was required to

    sign the pledge electronically before being able to access the data. The

ICPSR staff reviewed the application, and after they decided all

requirements are met, the researcher received electronic instructions for

accessing the data through an email containing a temporary link and

password to download files. Data was obtained in SPSS format.

Data Analysis

The data analysis plan for this correlational study includes descriptive and

inferential statistical analysis. The following section details the data analysis plan, and

details all study variables, including how NCS-R variables were re-coded for the present

study. It begins with a review of the IBM SPSS 25 Complex Samples (CS) function used

for statistical analysis in the current study.

IBM SPSS 25 Complex Samples. As noted earlier, the NCS-R dataset was

collected using non-random sampling methods, including clustering and stratification.

The sample was also weighted to make it representative of the U.S. 2000 Census. For

these reasons, the NCS-R data set is a complex sample. As opposed to a random sample,

a complex sample's individual sampling units are not randomly selected with equal

probability and the resulting sample thus violates the assumption of independence of

observations (Osborne, 2011). Failure to appropriately model the complex sample can

bias the results of the analysis and lead to misestimation of significance levels in

inferential statistics (Lee & Forthofer, 2006; West, 2008). IBM SPSS 25 CS function

incorporates the complex design specifications into the data analysis, thus ensuring

results are valid (IBM SPSS Statistics, 2017). IBM SPSS 25 CS (2017) software accounts

for complex sampling design including stratification, clustering, non-random sampling,

multistage sampling, and sample weights. SPSS CS supports Taylor-Series linearization

estimation of sampling error for weighted descriptive statistics, crosstabulations, and

logistic regression (Dhingra et al., 2010). The Complex Samples analysis procedures in

IBM SPSS 25 require sampling weights to properly analyze a complex sample. The

sampling weights are included as part of the NCS-R data set and were used to develop a

complex samples data analysis plan prior to data analysis. The IBM SPSS 25 CS (2017)

user manual warns the SPSS "Weight Cases" function treats weights as case replications,

and therefore should not be used in lieu of the SPSS CS function when working with

weights in complex samples.

Weights. The NCS-R used a three stage, clustered sampling strategy to address

probability, representativeness, and randomness. However, this sampling strategy

introduces sampling bias (Alegria, Jackson, Kessler, & Takeuchi, 2003b; Hahs-Vaughn,

2005). Therefore, weights are introduced to account for the effects of clustering,

stratification and oversampling used in the NCS-R. Weights in statistical analysis

increase precision—they are necessary to accurately estimate the population within the

sample. Not adjusting for the proper weight in secondary data analysis to account for

disproportionate sampling may result in biased parameter estimates and poor

performance of test statistics and confidence intervals (Boo & Froelicher, 2013; Buckley

& King-Hele, 2015; Pfeffermann, 1993). Weights are used to obtain correct, unbiased

prevalence (Alegria et al., 2003b). All the CPES data sets are released with a list of

weight variables to be chosen depending on the data set used (Alegria et al., 2003b). The

CPES Universe provides two additional variables to account for clustering and design

effect. The present study used three variables for weight: 1) NCSRWTLG (corresponding

variable for the NCS-R Part II sample); 2) SECLUSTR (clustering effect); and 3)

SESTRAT (stratification) (Alegria, Jackson, Kessler, & Takeuchi, 2003a). By

incorporating these variables, descriptive statistics of the sample can be estimated and

compared to the weighted means and proportions in the original NCS-R Part II sample to

test for accuracy (Gonzalez et al., 2011; Kessler, Berglund, et al., 2004; Kessler &

Merikangas, 2004).

Data analysis plan. The NCS-R Part II Sample was downloaded into IBM SPSS

Statistics for Windows, Version 25 (SPSS 25) in two parts: the NCS-R (DS0002) from

the ICPSR website and the NCS-R restricted data set (DS0005) from the protected zip

file obtained from ICPSR staff after completing the application for restricted use data.

The two files were then merged into one data set. The variables needed for the current

study were identified and extracted into a new data set which contained all variables to be

used in the study, including the weight and sampling design variables. The next step

recoded all variables needed for the study: reversing negatively worded items and

transforming the childhood adversity variables into new variables to create a ten-item

ACE scale based on the CDC-Kaiser ACE Study scale items (Table 1). Once the ten ACE

variables were created, the continuous ACE variable was collapsed into a second ACE

variable, ACE_STRATIFIED, with only five ACE values (0, 1. 2, 3, 4 or more)

corresponding with CDC-Kaiser ACE Study.

Analysis was applied to the sample size N=5692. Prior to data analysis, SPSS 25

CS was used to create a Data Analysis Plan file, CA_HELP_Analysis Plan, which

incorporated the NCSRWTLG, SESTRAT, and SECLUSTR variables from the NCS-R.

The CA_HELP_Analysis Plan was then used in the SPSS 25 CS function to run all

statistical analyses for this study, both descriptive and inferential. First, descriptive

statistics were used to obtain prevalence information for each of the variables included in the study. Then, inferential data analysis was used to test the study hypotheses and exploratory questions. Since there were several categorical variables, Chi-Square Test of Independence was used for data analysis. Crosstabulations estimated the percentage of respondents for each sets of variables, including ACEs, help-seeking attitudes, predisposing factors (past treatment), need factors (psychopathology in last 12 months or history of suicidal behavior), and sociodemographic factors (gender, age, race/ethnicity, education level, marital status, insurance coverage status, and financial insecurity). The Chi-Square Test of Independence was used to test the associations between all the variables, starting with the association between the degree of ACE exposure (as measured by ACE Score) and the three attitudes toward help-seeking dimensions (intent, self-disclosure, and self-stigma). A Chi-Square Test of Independence only assesses associations between categorical variables—it does not provide any inferences on causation (Lipsitz et al., 2015).

A significance level of 0.05 was used to determine if a statistically significant dose-respondent relationship occurred between ACE exposure and each of the three attitudes toward professional help-seeking only by chance. If there is less than a 5% probability that a relationship between ACE exposure and a help-seeking dimension occurred only by chance, the null hypothesis was rejected. This indicated there was a significant dose-respondent relationship between ACE exposure and the help-seeking dimension (intent, self-disclosure and perceived social stigma). However, if there is higher than a 5% probability that a dose-respondent relationship and each help-seeking dimension exists, the null hypothesis for that dimension was accepted. This indicated

there was not a significant relationship between ACE exposure and/or help-seeking intent, self-disclosure, perceived self-stigma. Since this is a non-probability statistical procedure, it is not to be generalized to the whole population, but it is representative of the sample for this study. While the NCS-R was only representative of the U.S. population as measured by the 2000 census, this study still provides relevant information on the relationship between ACE exposure and help seeking.

Next, logistic regression was performed to estimate the adjusted odds ratios (ORs) and their 95% confidence interval for positive attitudes toward professional help-seeking associated with ACE exposure, predisposing factors, enabling and impeding factors, and psychiatric need factors. This helped clarify the relationship between cumulative childhood adversity and attitudes toward seeking professional help, while considering these other factors. Based on Andersen's Socio-Behavioral Model of Health Service Use and existing empirical data, four multivariate logistic regression models were developed to compute odds ratios for having a positive attitude toward professional help-seeking for serious emotional problems. First, the relationship between ACE score and each of the three dimensions of help-seeking was tested. Then, the subsequent models progressively adjusted for predisposing factors, enabling and impeding factors, and psychiatric need factors. Model One included only ACE score. Model Two added the predisposing factors (age, gender, race, ethnicity, marital status, and education). Model Three added enabling and impeding factors (financial insecurity, health insurance status, past treatment history, history of suicidal behavior). Finally, Model Four added psychiatric need (clinically significant symptoms of depressive disorder, anxiety disorder, bipolar disorder, and substance use disorder in the past 12 months).

The four models tested the interaction between each of the three DV's (help-seeking attitudes), the IV (ACE score), and predisposing, enabling/impeding, and psychiatric need factors. This was done by entering the variables in hierarchical blocks consistent with Andersen's (1995) Socio-Behavioral Model and additional theoretical expectations based on prior research. Hierarchical entry of blocks is used to test the unique effect of each set of factors on dependent variables while controlling for the effects of the other independent variables (Berry & Feldman, 1985). The order of block entry is based on the existing empirical data indicating that each factor (predisposing-, enabling and impeding-, and psychiatric need-) is associated with professional help-seeking attitudes.

The help-seeking dimensions (DV's) were tested in this order: 1) intention, 2) self-disclosure, and 3) social stigma. The same hierarchical analysis, entering the four models in the same block order, was repeated with the each of the two additional dimensions of help-seeking: self-disclosure and social stigma. The first research question—Is there is a significant dose-respondent relationship between exposure to childhood adversity and intention to seek professional help? —was tested first. With intention to seek professional help for serious emotional problems entered as the dependent variable, ACE score (independent variable), was entered in the first block (Model One). Then, predisposing factors (age, gender, race, ethnicity, marital status, and education) were added (Model Two). Enabling and impeding factors (financial insecurity, health insurance status, past treatment history, history of suicidal behavior) were entered next (Model Three). And last, psychiatric need (clinically significant symptoms of

depressive disorder, anxiety disorder, bipolar disorder, and substance use disorder in the

past 12 months) was added (Model Four).

The same four interaction models were run on the second research question—Is

there a significant dose-respondent relationship between exposure to childhood adversity

and level of comfort with self-disclosure to a professional source of help? Level of

comfort with self-disclosure to a professional was entered as the dependent variable for

all four models. ACE score (independent variable), was entered first (Model One). Then,

predisposing factors (age, gender, race, ethnicity, marital status, and education) were

added (Model Two). Enabling and impeding factors (financial insecurity, health

insurance status, past treatment history, history of suicidal behavior) were entered next

(Model Three). And last, psychiatric need (clinically significant symptoms of depressive

disorder, anxiety disorder, bipolar disorder, and substance use disorder in the past 12

months) was added (Model Four).

Finally, the same four interaction models were run on the third research

question—Is there a significant dose-respondent relationship between exposure to

childhood adversity and level of perceived social stigma over getting professional help

for serious emotional problems? Perceived social stigma was entered as the dependent

variable for all four models. ACE score (independent variable), was entered first (Model

One). Then, predisposing factors (age, gender, race, ethnicity, marital status, and

education) were added (Model Two). Enabling and impeding factors (financial insecurity,

health insurance status, past treatment history, history of suicidal behavior) were entered

next (Model Three). And last, psychiatric need (clinically significant symptoms of

depressive disorder, anxiety disorder, bipolar disorder, and substance use disorder in the

past 12 months) was added (Model Four).

The four logistical regression models and the order of block entry for each step in

the regression provided an understanding of the interactions between CA and help-

seeking, while controlling for factors associated with health service use. First, how does

CA influence attitudes toward help-seeking? Then, do attitudes toward help-seeking

change in relation to predisposing, enabling/impeding, and/or psychiatric factors? Finally,

do the effects of ACE exposure on attitudes toward help-seeking remain the same or

change depending on these other factors?

Study Variables

Since the present study used data from a secondary source, data started with

identifying the necessary variables within the existing data set and laying out a plan for

constructing new variables from re-coding existing variables and combining a series of

variables into a new variable. The following section details how variables were identified

and prepared for data analysis.

Dependent variables. The dependent variables were measured by three questions

related to attitudes toward seeking mental health treatment. The NCS-R coded the

answers to each question as ordinal variables: e.g. "If you had a serious emotional

problem, would you definitely go for professional help, probably go for professional

help, probably not go, or definitely not go for professional help?". The present study re-

coded the original ordinal variables for each DV to dummy dichotomous variables (coded

as "1" for yes and "0" for no) for use in a logistic regression analysis. The dependent

variables were then operationalized as three separate dichotomous variables: 1) likelihood

of seeking professional help for emotional problems (yes=1, no= 0); 2) comfortable with

talking to a professional about personal problems (yes=1, no=0); and 3) embarrassed if

friends knew I was getting professional help for emotions (yes=1 no=0) (See Table 1 for

details).

Independent variable. The independent variable was ACE score (stratified into

five categories: 0, 1, 2, 3, and 4 and above), used as a measure of exposure to childhood

adversity. There are 28 variables taken from the NCS-R dataset to measure exposure to

childhood adversity, each one is coded as a dichotomous variable (yes=1, no=0). The

present study separated individual measures of exposure to CA into three different types:

1) interpersonal loss (parental death, separation/divorce, and foster care placement); 2)

risky family environments (parental mental illness, substance abuse, criminality, family

violence, family poverty); and 3) childhood maltreatment (physical abuse, sexual abuse,

physical neglect, emotional neglect) (See Table 1 for details). The 28 variables are

recalculated and combined into ten discrete measures of childhood adversity, following

the ten-item CDC ACE Study (1998) questionnaire. Each measure of CA was re-coded in

the data analysis to correspond to nine of the ten items from the CDC ACE study. The

CDC ACE study asks only one question about interpersonal loss—if parents were

separated, divorced or unmarried. However, the NCS-R collects data about parental death

and foster care placement. These two additional data points are combined into one

variable on interpersonal loss. One item from the CDC ACE study questionnaire—verbal

abuse—is not captured in the NCS-R dataset (Green et al., 2010). Instead, the present

study defines the tenth ACE item as family poverty, based on the NCS-R question, "Did

your family receive government assistance for 6 months or more during your childhood

or adolescence?".

For example, the six NCS-R variables that comprise parental mental illness

(maternal and paternal depression, maternal and paternal anxiety, maternal and paternal

suicide attempt) were recalculated into one dichotomous (yes/no) variable. If a

respondent endorsed "yes" to any of the six questions related to parental mental illness,

then the respondent was recoded as being exposed to parental mental illness

(dichotomous, yes=1)/no=0). Further, this matches the CDC ACE study questionnaire

item number nine: "Was a household member depressed or mentally ill or did a

household member attempt suicide?" Converting the NCS-R childhood adversity items to

the ten CDC ACE items, allowed the results to be compared to national trends in

exposure to childhood adversity. See Appendix A for the CDC ACE study questionnaire.

An analysis by Green, et al. (2010) of the relationship between childhood

adversity and adult psychiatric disorders using the NCS-R dataset noted indicators of

"maladaptive family functioning" to be significantly associated with the onset of

psychiatric disorders. Maladaptive family functioning cluster of CA includes parental

mental illness, substance use disorder, and criminality; domestic violence; physical

abuse; sexual abuse, and neglect (Green et al., 2010). In the NCS-R, approximately

53.4% of all respondents reported having at least one CA—with parental divorce (17.5%)

the most common, followed by family violence (14%), and parental mental illness

(10.3%). As with the CDC ACE study, the NCS-R found a cumulative effect with a mean

of 3.2 childhood adversities for respondents with more than one exposure. The model that

showed the greatest significance in terms of adult psychopathology was the clustering of

maladaptive family functioning CA exposures. Each maladaptive family functioning-related childhood adversity was significantly associated with each disorder class—mood disorders, anxiety disorders, and substance use disorders (Green et al., 2010). The other CAs measured in the study—parental death, parental divorce, other parental loss, childhood physical illness, and family economic adversity—were not significantly associated with the risk of developing mood disorders in adulthood (Green et al., 2010). The present study does not include other parental loss, childhood physical illness, and family economic adversity, because they have not shown a significant relationship with developing depression and other mood disorders in adulthood (Green et al., 2010). However, emotional neglect is included because studies show a significant relationship between it and depression and other mood disorders in adulthood (Perna et al., 2014; Spertus et al., 2003; Sudbrack et al., 2015). The ten ACE items were combined into a total ACE score. The total ACE score was stratified into five categories (0, 1, 2, 3, 4+) for inferential data analysis.

Control variables. Because the association between two variables cannot account for the influence of other factors that might affect the outcome, control variables were identified, based on Andersen's Socio-Behavioral Model of Healthcare Use to examine how the independent influence of ACEs might vary while controlling for the potential influence of other factors. Control variables include predisposing factors, enabling/impeding factors, and psychiatric need factors. These variables were chosen as research shows each one is associated with help-seeking.

Predisposing factors. Predisposing factors associated with professional healthcare utilization for mental and emotional problems include age, gender, race-ethnicity, marital

status, and education status (Andersen & Newman, 2005). For example, age is a factor

significantly associated with help-seeking behavior—multiple studies show young adults

(aged 18-25) are significantly less likely than older adults to seek help for mental health

reasons (Gonzalez et al., 2005; Mojtabai et al., 2002; E. R. Walker, Cummings,

Hockenberry, & Druss, 2015). Factors associated with positive attitudes toward

professional help seeking include being female, being over the age of 35, being married

and being a college graduate (Mackenzie et al., 2014; Rüsch, Müller, et al., 2013; ten

Have et al., 2010; Topkaya, 2015; Wei, McGrath, Hayden, & Kutcher, 2015).

Race-ethnicity has different associations with help-seeking. Some studies show

race-ethnicity is a factor positively associated with attitudes toward seeking help: A

secondary analysis of the NCS-R data linked being African-American and

Hispanic/Latino with increased willingness to seek help and lesser perceived social

stigma from receiving mental health treatment than non-Hispanic whites (Shim,

Compton, Rust, Druss, & Kaslow, 2009). However, after controlling for socio-economic

factors, being Hispanic/Latino was no longer a predictor of reporting willingness to seek

professional treatment. other studies have shown race/ethnicity disparities in access to

care (Alegria et al., 2008; Collins et al., 2004; Lasser et al., 2006; Lê Cook & Alegria,

2011).

Enabling and impeding factors. The enabling and impeding factors used in this

study include the following variables: financial insecurity, health insurance status, past

treatment history, and lifetime history of suicidal behavior. Low socioeconomic status is

also associated with decreased access to care (Collins et al., 2004; Lasser et al., 2006;

Saloner & Lê Cook, 2013). Low personal and neighborhood SES, limited social capital

and financial hardship are all associated with structural factors that limit access to care

and act as an impeding factor to service utilization (Aldridge et al., 2018; D. Kim, 2008;

Saloner & Lê Cook, 2013). Insurance coverage status can be an enabling or impeding

factor—lack of insurance coverage has been shown to result in decreased healthcare

utilization rates and to impede help-seeking (Jagdeo et al., 2009; D. Kim, 2008; Lasser et

al., 2006). Although there are multiple ways of measuring poverty and socioeconomic

status, the present study used an NCS-R variable associated with material insecurity and

deprivation insecurity (Alkire & Foster, 2008; Kuruvilla & Jacob, 2007; Short, 2005).

Financial insecurity was chosen over poverty level as it is a factor associated with life

course effects of exposure to childhood adversity, as well as stressful conditions in

adulthood which may impact a person's willingness or ability to seek help (Muntaner,

Eaton, Miech, & O'Campo, 2004; Nurius, Green, Logan-Greene, & Borja, 2015; Nurius

et al., 2012). The question, "Do you have enough money to meet your needs?"

(dichotomous, yes (1)/ no (0))? Was used as the variable to measure financial insecurity.

Respondents who endorsed "yes" to the question, were re-coded as "yes" to financial

security.

Another enabling factor is past treatment utilization, which has been shown to

have a consistent association between past help-seeking and future help-seeking

intentions (Burns et al., 2003; Elhai & Simons, 2007; Rickwood et al., 2007). This was

measured through three questions to define past treatment utilization: lifetime experience

with counseling for mental health reasons for 30 minutes or more, lifetime history of

being prescribed medication for mental or emotional problems, and lifetime incidence of

having an overnight stay in a hospital or facility for mental health reasons. The literature

also indicates an association between exposure to childhood adversity and healthcare

utilization (Bonomi et al., 2008; Chartier et al., 2007; Fleury et al., 2014), therefore it was

necessary to control for past treatment utilization as an enabling factor in Model Three of

the logistic regression analysis.

The last enabling/impeding factor is lifetime history of suicidal behavior. Suicidal

behavior has been shown in the literature as an impeding factor to help-seeking (Czyz et

al., 2013; Yakunina et al., 2010). The present study created this variable by combining

two variables: lifetime history of suicide attempt and lifetime history of serious suicidal

thoughts. The resulting variable—SUICIDAL BEHAVIOR—was used in the analysis in

the enabling/impeding factors block starting in Model Three. There is extensive empirical

evidence for the help-negation effect of suicidal behavior, whereby individuals with acute

suicidal ideation are unwilling to seek help from any source—formal or informal (Czyz et

al., 2013; Eisenberg et al., 2012; Reynders, Kerkhof, Molenberghs, & Van Audenhove,

2013; Wilson, Deane, Marshall, & Dalley, 2008)

Psychiatric need. Psychiatric need factors were operationalized as 12-month

incidence of clinically significant psychopathology using the DSM-IV diagnostic criteria

for four disorders. The NCS-R variables for clinically significant symptoms of depressive

disorder, anxiety disorder, bipolar disorder and substance use disorder were recoded into

four dichotomous variables (present=1, not present=0) for each disorder. See Table 1 for

details of what variables were combined for each disorder. The four new variables were

entered as a block in Model Four to adjust for the possible confounding effects of

psychiatric symptoms on the interaction between exposure to CA and attitudes toward

help seeking (Elhai & Ford, 2007; Wilson & Deane, 2010; Yakunina et al., 2010).

Research following Andersen's Socio-Behavioral Model of Healthcare Use show need

factors are the strongest predictors of mental health service utilization (Andersen &

Newman, 2005; Babitsch et al., 2012; Desai, Lawson, Barner, & Rascati, 2013). Multiple

studies have shown the presence of psychiatric symptoms increase the likelihood of

mental health help-seeking (Bonabi et al., 2016; Fleury et al., 2014; Mills et al., 2012;

Stige et al., 2013). There is also an established association between exposure to childhood

adversity and psychopathology in adulthood (Chapman et al., 2004; Dube et al., 2001;

Lereya et al., 2015; van Nierop et al., 2015). Controlling for psychiatric need factors

allows for a clearer analysis of the relationship between help-seeking and childhood

adversity. Table 1 details the coding plan used including the original questions and

variables, as well as how they were combined and/or recoded for analysis.

Table 1: Coding Plan

Dependent Variable (DV)	Definition	Value
Attitude Toward Seeking Mental Health Treatment Present study: 3 non-collinear DV's Universe: BLCHRONIC Chronic Conditions	**1. Probability of seeking professional help for emotional problems** *CC51. People differ a lot in their feelings about professional help for emotional problems. If you had a serious emotional problem, would you definitely go for professional help, probably go, probably not go, or definitely not go for professional help?* NCS-R (frequency) 1 WOULD DEFINITELY GO (23.6%) 2 WOULD PROBABLY GO (19.9%) 3 WOULD PROBABLY NOT GO (5.7%) 4 WOULD DEFINITELY NOT GO (2.4%)	Re-coded into one dichotomous DV (yes-1/ no-0) (1-2) = yes (1), would to go for professional help (3-4) = no (0), would not go for professional help
	2. Comfortable with talking to a professional about personal problems *CC52. How comfortable would you feel talking about personal problems with a professional - very comfortable, somewhat, not very, or not at all comfortable?* NCSR (Frequency %) 1 VERY COMFORTABLE (19.8%) 2 SOMEWHAT COMFORTABLE (20.7%) 3 NOT VERY COMFORTABLE (7.8%) 4 NOT AT ALL COMFORTABLE (2.9%)	Re-coded into one dichotomous DV (yes-1/ no-0) (1-2) = yes (1), comfortable with talking to professional (3-4) = no (0), not comfortable with talking to professional

	3. **Embarrassed from seeking professional treatment**
	
	CC53. How embarrassed would you be if your friends knew you were getting professional help for an emotional problem - very embarrassed, somewhat, not very, or not at all embarrassed?
	
	NCS-R (Frequency %)
	1 VERY EMBARRASSED
	          (3.6%)
	2 SOMEWHAT EMBARRASSED
	          (11.8%)
	3 NOT VERY EMBARRASSED
	          (11.4%)
	4 NOT AT ALL EMBARRASSED
	          (24.5%)
		Re-coded into one dichotomous DV (yes-1/ no-0)
		
		(1-2) = yes (0)*, embarrassed;
		(3-4) = no (1), not embarrassed
		
		Reverse coded so 1 = positive attitude toward help-seeking

Independent Variables (IV)	**Definition**	**Value**

Exposure Childhood Adversity (CA) recoded to follow the 10-item ACE Study Questionnaire Universe:
BLCHILDHOO Childhood (unless noted *)
	3 Groups of ACEs (Adverse Childhood Experiences)
	    A. Interpersonal loss
	    B. Risky family environment
	    C. Maltreatment
		25 total variables measuring exposure to childhood adversity, re-coded to 10 dichotomous variables

Category A: Interpersonal loss

Description	Variable #	Value
1. Lived with biological parents until age 16	CH1	1(yes) = interpersonal loss, 0 (no) = no interpersonal loss ACE

Category B: Risky family environment

Description	Variable #	Value
2. Parental mental illness Depression Anxiety Suicide attempt	CH41(m)/ CH71 (f) CH46(m)/ CH76 (f) CH67(m)/ CH97 (f)	The six items (three indicators of parental mental illness/one for each parent) were combined into one dichotomous variable, so endorsing "yes" for any one item results in a "Yes (1)" for Exposure to Parental Mental Illness. 1(yes), 0 (no)
3. Parental substance abuse Mother Father	CH52 CH82	Two items (maternal and paternal) were combined and re-coded into one variable so that yes for either will equal "yes (1)" for exposure to parental substance abuse. 1(yes), 0 (no)
4. Parental criminality Mother Father	CH64 CH94	Two items (maternal and paternal) were combined and re-coded into one variable so that yes for either will equal "yes (1)" for exposure to parental criminality. 1(yes), 0 (no)
5. Family Violence Frequency parents did things on list A to each other when growing up List A: • PUSHED, GRABBED OR SHOVED • THREW SOMETHING • SLAPPED OR HIT	CH29	Re-code from an ordinal value in the NCS-R dataset into a dichotomous IV for the present study (yes-1/ no-0) YES (1) = 1-2 (often, sometimes) NO (0) = 3-4 (rarely, never)

6. Family Poverty Family received gov't assistance for 6+ months in childhood/adolescence	CH19 CONSIDER: CH1 (Better Off Financially Compared to Average Child)	1 (yes), 0 (no)	

Category C: Maltreatment

Description	Variable #	Value
7. Physical Abuse *Q. *CH28. (Respondent Book, PG 56) When you were growing up, how often did someone in your household do any of the things (on list A) to you – often, sometimes, rarely, or never?* List A: • PUSHED, GRABBED OR SHOVED • THREW SOMETHING • SLAPPED OR HIT	CH28	Re-code from an ordinal value in the NCS-R dataset into a dichotomous IV for the present study (yes-1/ no-0) YES (1) = 1-2 (often, sometimes) NO (0) = 3-4 (rarely, never)
8. Sexual Abuse From PTSD Interview **PT45. (KEY PHRASE: raped) The next two questions are about sexual assault. The first is about rape. We define this as someone either having sexual intercourse with you or penetrating your body with a finger or object when you did not want them to, either by threatening you or using force, or when you were so young that you didn't know what was happening. Did this ever happen to you? *PT45a. How old were you the first time it happened? Age in Years *PT46. (KEY PHRASE: sexually assaulted)*	PT45/ PT 46 Childhood sexual abuse is coded as "yes (1)" if the respondent endorsed "Yes" to either question PT45 (rape) or PT46 (molestation), as well as reported that their first experience of rape or molestation occurred	Re-code into one dichotomous variable (yes=1/no=0) if either rape or molestation are endorsed as experienced before age 18. 1 (yes)/ 0 (no) Age when it occurred: 1-17 1 (yes)/ 0 (no) Age when it occurred: 1-17

*Other than rape, were you ever sexually assaulted, where someone touched you inappropriately, or when you did not want them to? *PT46a. How old were you the first time it happened? Age in Years*	before 18 years of age (questions 45a and 46a) *variables are part of restricted dataset		
9. Physical Neglect • Frequently made to do chores too difficult/dangerous for age in childhood • Frequently left unsupervised at too early age • Went without needed things due to parents spending on selves • Frequently went hungry/parents didn't fix meals in childhood • Frequently parents failed to get medical treatment when sick/hurt as a child	CH30_1A CH30_1B CH30_1C CH30_1D CH30_1E	Physical neglect consists of five different items, calculated and re-coded so that a yes on any one item = yes for physical neglect. 1(yes), 0 (no)	
10. Emotional Neglect Level of emotional closeness Maternal figure- *CH39_1 How emotionally close were you with her while you were growing up - very close, somewhat, not very, or not at all?* Paternal figure *CH69_1 How emotionally close were you with him while you were growing up - very close, somewhat, not very, or not at all?* Love from parents Maternal figure *CH40a How much love and affection did she give you? -- a lot, some, a little, or not at all?* Paternal figure *CH69_2a How much love and affection did he give you? (IF NEC:*	Emotional neglect is coded as a "yes (1)" if the respondent endorses either feeling not very or not at all emotionally close to either maternal or paternal figure while growing up, or that maternal or paternal figure gave a little or no love and affection while growing up.	Emotional neglect consists of two items (emotional closeness and amount of love and affection given by caregiver. The two items were recalculated so that a yes on either item equals yes (1) for emotional neglect. The original ordinal variable for both was recoded into dichotomous variable. YES (1) = (3-4) not very, none at all NO (0) = (1-2) very, somewhat YES (1) = (3,4) a little, none at all NO (0) = (1,2) a lot, some	

	Would you say a lot, some, a little, or not at all?)	CH39_1 (m) CH69_1 (f) CH40A (m) CH69_2A (f)	

Predisposing Factors **(Variables entered as block in logistic regression Model 2)**		
Control Variables	**Definition**	**Value**
Socio-demographic variables) (Universe: DEMOGRAPHIC)	AGE continuous numeric value (18 and up)	Age variable was binned into five groups (AGE_BINNED): 18-25 26-44 45-54 55-64 $\geq$ 65
Sex	SEX MALE 42.7% (freq.) FEMALE 57.3 %	Dichotomous variable: 0 = female 1 = male
Marital Status (3 categories)	MAR3CAT MARRIED/COHABITING 53.6 % (freq.) DIVORCED/SEPARATED/ WIDOWED 22.6% NEVER MARRIED 23.8 %	Ordinal variable, three possible values: 1 = married 2 = divorced/ separated/widowed 3 = never married
Educational Level (4 categories)	ED4CAT 0-11 YEARS 20.3% 12 YEARS 29.7% 13-15 YEARS 26.4% GREATER THAN OR EQUAL TO 16 YEARS 23.6%	Ordinal variable, four possible values 1 = no high school graduation (0-11 years) 2 = high school graduate (=12 years) 3= some college (13-15 years) 4= college degree or higher (16+ years)

Race/Ancestry	RANCEST 1 VIETNAMESE 2.6%	Ordinal variable, 12 possible values, recoded into 5 categories:
	2 FILIPINO 2.5%	(1-4) = Asian (1)
	3 CHINESE 3.0%	(5-8) = Hispanic/
	4 ALL OTHER ASIAN 3.3%	Latino (2)
	5 CUBAN 2.9 %	(8-10) = African
	6 PUERTO RICAN 2.5%	American (3)
	7 MEXICAN 7.2%	(11) = White Non-Hispanic
	8 ALL OTHER HISPANIC 5.5%	(12) = Other (5)
	9 AFRO-CARIBBEAN 7.5%	
	10 AFRICAN AMERICAN 23.7%	
	11 NON-LATINO WHITES 37.9%	
	12 ALL OTHER 1.4%	

Enabling and Impeding Factors **(Variables entered as a block in logistic regression Model 3)**		
Control Variables	**Definition**	**Value**
Insurance coverage Universe: BLCHRONIC Chronic Conditions	Separate variable for each type CC50: Covered by type of military health insurance CC50_1: Health insurance obtained through employer/union CC50_2: Covered by health ins plan purchased from ins company CC50_3/CC50_3A: Covered by Medicare/Covered by Medicare Supplemental or Medigap CC50_4: Covered by government assistant program for people in need	Variable re-coded into a single dichotomous control variable, an endorsement of "yes" for any insurance type equals "yes (1)" for insured; while endorsing no for all insurance type equals "no (0)" uninsured. For all insurance types, 1= yes and 0=no

	CC50_5: Covered by state health ins for uninsured people CC50_7: Covered by other health insurances not mentioned	
Poverty/Financial insecurity/ Socioeconomic Placement SECTION_H Personal Data	FN14: You have more/just enough/not enough money to meet needs (will be recoded into yes if endorsing "not enough money to meet needs)	Variable re-coded into a single dichotomous control variable: "yes" ("have enough money to meet needs") = 1 (financial security); "no" = 0 (no financial security). 1(yes), 0 (no)

Past treatment
Universe:
    BLSERVICES
    Services
	SR12
	Professional psych counsel or therapy for 30 min +
	
	Q. SR12 Did you ever in your life have a session of psychological counseling or therapy that lasted 30 minutes or longer with any type of professional?
		Dichotomous variables for all past treatment types:
		1(yes), 0 (no)

	SR13 Received meds for emotions/mental health from professional *Q. SR13 Did you ever get a prescription or medicine for your emotions, nerves or mental health [(or substance use)] from any type of professional?*	1(yes), 0 (no)
	SR2 Overnight stay in hospital/facility for mental health/drug-alcohol use *Q. SR2 Have you ever in your lifetime been admitted for an*	1(yes), 0 (no)

	overnight stay in a hospital or other facility to receive help for problems with your emotions, nerves, mental health, or your use of alcohol or drugs?	
LIFETIME SUICIDAL BEHAVIOR	SD2: Seriously thought about committing suicide SD6: Ever attempted suicide	Combined the two variables and Recoded into new variable: SUICIDAL BEHAVIOR 1 for either variable = 1 (yes, lifetime suicidal behavior), 0 for both variables = 0 (no lifetime suicidal behavior)

Psychiatric Need (Variables entered as a block in logistic regression Model 4)		
All diagnostic variables were combined and re-coded so that presence of any subtype of disorder in the past 12 months equals "yes (1)" for that disorder; and 0 = 0 for all variables.		
Control Variables	**Definition**	**Value**
Depressive disorder	D_MDDH12 DSM-IV Major Depressive Disorder w/ hierarchy (12Mo) D_MDE12 DSM-IV Major Depressive Episode (12Mo)	Combined the two variables and Recoded into new variable: NEED_MDD 1 for either variable = 1 (yes), 0 for both variables = 0 (no depressive disorder)

Anxiety Disorders	D_ASA12 DSM-IV Adult Separation Anxiety Disorder (12Mo) D_AGP12 DSM-IV Agoraphobia with Panic Disorder (12Mo) D_GAD12 DSM-IV Generalized Anxiety Disorder (12Mo) D_PAT12 DSM-IV Panic Attack (12 month) D_PTS12 DSM-IV Posttraumatic Stress Disorder (12Mo) D_SO12 DSM-IV Social Phobia (12 month)	PSYCH_NEED_ANXIETY: 1(yes), 0 (no)
Bipolar Disorder	D_BIPOLARII12 DSM-IV Bi-polar II (12Mo) D_BIPLARSUB12 DSM-IV Bi-Polar Subthreshold (12Mo) D_BIPOLARI12 DSM-IV Bi-polar I (12Mo) D_MAN12 DSM-IV Mania (12 month)	PSYCH_NEED_BIPOLAR: 1(yes), 0 (no)
Substance Use Disorders	D_ALA12 DSM-IV Alcohol Abuse (12Mo) D_ALD12 DSM-IV Alcohol Dependence (12 month) D_DRA12 DSM-IV Drug Abuse (12 month) D_DRD12 DSM-IV Drug Dependence (12 month)	PSYCH_NEED_SUD: 1(yes), 0 (no)
Variables used to develop CS data analysis plan		
ADDITIONAL VARIABLES TO ACCOUNT FOR COMPLEX SAMPLING PROCEDURES	1) NCSRWTLG (corresponding variable for the NCS-R Part II sample) 2) SECLUSTR (clustering effect) 3) SESTRAT (stratification)	Entered into SPSS complex samples function to increase representativeness of sample

Ethical Considerations

The restricted versions of this data collection may not be used for any purpose

other than statistical reporting and analysis. Use of the restricted versions to learn the

identity of any person or establishment is prohibited. To protect respondent privacy, the

names and IDs are restricted from general dissemination. To obtain this file, researchers

must agree to the terms and conditions of a Restricted Data Use Agreement in accordance

with existing ICPSR servicing policies.

Research data will be stored in a stand-alone, non-networked computer attached

to an encrypted external hard drive. The computer is located in a secure location inside a

locked room, where only project personnel have access. The encrypted external hard

drive will be stored in a locked cabinet, inside a locked room when not in use.

The statistical analysis application, SPSS Statistics 25, is installed on the non-

networked computer's local hard drive, not on a network server. The non-networked

computer used for this research project uses Windows 10. The encrypted external hard

drive will not be moved from the secure location specified in this plan. The sensitive

data will be password protected and accessed through a local user ID created for that

purpose. The research data in this study and program files will have separate directories

on the external hard drive. The hard drive will be encrypted with AxCrypt, a whole disk

encryption program. SPSS software will be configured to point temporary work files to

the encrypted sensitive data directory on the external hard drive.

The screensaver on the non-networked computer is password protected and set to

activate after 3 minutes of inactivity. Secure Eraser, a secure erasure program will be set

to run monthly and after the secure data has been removed from the computer at the end of the contract period (09/30/2018).

Each time the sensitive external hard drive is used the authorized researcher will log in using the local user ID, the computer and encrypted external hard drive will not be left unattended, and backup copies of the program and documentation directories will be made each time changes are made. Confidential research data will not be copied or moved out of the secured directory on the encrypted external hard drive for any reason. When not using the confidential research data external hard drive, the computer will be powered down, the external hard drive will be disconnected and locked inside a file cabinet.

Chapter 4: Results

The purpose of this study was to examine the relationship between CA and attitudes toward professional help-seeking through secondary data analysis of a US nationally representative sample, the National Comorbidity Survey-Replication (NCS-R). The researcher obtained the data for this research study from the Inter-university Consortium for Political and Social Research (ICPSR) after completing the online application process to access the restricted data set necessary for the present study. After the application for access to restricted data was approved by staff at ICPSR, the researcher received electronic instructions for accessing the data through an email containing a temporary link and password to download files. Data was obtained in SPSS format. Using IBM SPSS v. 25, the researcher began by identifying the variables needed for the present study—these variables were in two different files: DS0002 (NCS-R) and DS0005 (NCS-R Restricted). Next, the study variables from the two different data sets were merged into a new data set for recoding and data analysis. Data was recoded into variables for the study as noted in the methodology section of this study and analyzed using the Complex Samples function of IBM SPSS v. 25. Complex Samples analyses in SPSS v. 25 factors multistage designs—including clustering, stratification sampling and study weights—into data analysis. This chapter provides a summary of the results.

Missing data. Sample stratification, skip logic and other features of data collection in the NCS-R led to many missing values when the variables from the restricted and unrestricted data sets were merged. As detailed in the methodology chapter, the NCS-R consists of two surveys: Part I (n = 9,282) and Part II (n = 5,692). Participants for Part II were randomly drawn from the respondents from Part I. Since certain variables

for the present study were only in Part II and further, others were only available in the

restricted version of the NCS-R, there were up to 3,590 missing cases in the final data set

created for the present study. For example, demographic variables are from Part I of the

NCS-R population (n = 9,282), while others, such as childhood sexual abuse exposure,

are in the restricted data set (n = 3,956) and were available only through the restricted

data set with a smaller population (n=5,692). Missing data was accounted for in

inferential data analysis (crosstabulation and logistic regression) by running all analyses

through Complex Samples and excluding cases with missing values pairwise. The final

valid n, accounting for missing data used for analysis in this study was n = 5,692 for

descriptive statistics and n = 4,378 for inferential analysis.

Descriptive Data Analysis

The present study sought to explore the relationship between childhood adversity

and attitudes toward seeking help. Descriptive data analysis via crosstabulations

estimated the percentage of respondents with ACE exposure, positive help-seeking

attitude, predisposing factors (age, sex, race/ethnicity, marital status, years of education),

enabling or impeding factors (financial insecurity, health insurance coverage, history of

mental health service use, and psychiatric need factors (12-month incidence of

depressive, anxiety, bipolar or substance use disorder). See Table 2.

Table 2: Descriptive Statistics – Sociodemographic Variables

Variable		Valid N	Percent
Gender	FEMALE	2995	53%
	MALE	2654	47%
Age	18 – 25	970	17%
	26 – 44	2000	35%
	45 – 54	1090	19%
	55 – 64	655	12%
	65+	935	17%
Marital Status	Married/cohabiting	3166	56%
	Divorced/separated/ widowed	1165	21%
	Never married	1318	23%
Race/Ethnicity	Asian	93	2%
	Hispanic/Latino	629	11%
	African American	699	12%
	White Non-Hispanic	4107	73%
	Other	122	2%
Years of education	Not a High School Graduate	943	16.7%
	High School Graduate	1834	32.5%
	Some College	1560	27.6%
	College Graduate or Higher	1312	23.2%
Health Insurance Coverage	Not Insured	737	13.0%
	Insured	4913	87.0%
Have Enough Money to Meet Needs	NO	1472	27%
	YES	4086	73%

Table 3 presents the percentage of participants who positively endorsed the three attitudes toward seeking professional help, the prevalence of professional health service use, and psychopathology. Overall, the study population reflected positive attitudes professional help-seeking: the majority reported a willingness to seek professional help if they had a serious emotional problem (83.7%) and feeling comfortable talking with a mental health professional about personal problems (79.3%). Approximately one-third of respondents reported experiencing perceived stigma over receiving professional mental health treatment, with 33.3% reporting they would be embarrassed if their friends knew they were getting professional help for an emotional problem (Table 3).

Lifetime prevalence of professional mental health service utilization among the study population was measured along three categories: 1) professional psychological counseling or therapy for 30 minutes or more (31.1%); 2) being prescribed or receiving medication for emotions, nerves, or mental health or substance use from any type of professional (23.7%); and 3) had an overnight stay in a hospital or other facility to receive help for mental health or substance abuse problems (3.8%) (Table 3).

The population was also analyzed for 12-month prevalence of DSM-IV psychiatric disorders (depressive disorders, anxiety disorders, bipolar disorders and substance use disorders), as well as lifetime incidence of suicide attempt/serious suicidal ideation (combined into one variable measuring lifetime suicidality) (American Psychiatric Association, 1994). Anxiety disorders were most prevalent (24.3%), followed by depressive disorders (10.1%), bipolar disorders (2.8%), and substance use disorders (2.2%). The lifetime incidence of serious suicidal ideation or suicide attempt among the study population was 15.5%.

Table 3: Descriptive Statistics – Help-Seeking, Past Treatment & Psychopathology

Variable		N	Percent
Help-Seeking Dimension	Would seek professional help for serious emotional problem (help-seeking Intention)	4742	83.7%
	Would feel comfortable talking to professional about personal problems (self-disclosure)	4496	79.3%
	Would feel embarrassed if friends knew was getting professional help (perceived social stigma)	3769	33.2%
Past Mental Health Treatment History	Counseling for 30+ minutes	2395	31.3%
	Prescribed Medication for Mental Health Problems	1901	23.7%
	Overnight Stay in Hospital for Mental Health Problems	334	3.8%
Psychopathology (12-month incidence except for suicidal behavior)	Suicidal Behavior (lifetime)	1128	15.5%
	Depressive Disorder	793	8.3%
	Anxiety Disorder	1711	20.1%
	Bipolar Disorder	261	2.9%
	Substance Abuse/Dependence	283	3.8%

Considering the contribution of the Felitti et al.'s (1998) ACE study, the present

study recoded the childhood adversity variables to match the ten ACE items from the

original ACE study as closely as possible. This allows for comparison with the ACE data

from the original CDC-Kaiser study. To achieve the ten ACE variables for analysis, the

researcher combined variables from the original study and recoded them into ACE

variables which correspond with the variables from the CDC ACE study. Descriptive

data analysis was then run to compare ACE variables and rates from the present study

with ones from the CDC (Tables 4-6).

Table 4: Childhood Adversity by Category

	N	Percent
Interpersonal loss	1755	31%
Parental Mental Illness	1260	26%
Parental Substance Abuse or Dependence	1152	22%
Interpersonal Violence	552	10%
Childhood Poverty	547	10%
Parent Incarcerated	381	7%
Physical Abuse	501	18%
Physical Neglect	791	14%
Sexual Abuse	534	15%
Emotional Neglect	1614	28%

Table 5: ACE Score (Total)

		N	Percent
Number of ACEs	0	1793	32%
	1	1576	28%
	2	943	17%
	3	602	11%
	4	376	7%
	5	212	4%
	6	106	2%
	7	53	1%
	8	23	0%
	9	6	0%
	10	1	0%
	Total	5692	100%

Table 6: ACE Score (Stratified)

		N	Percent
Total ACEs	0	1793	32%
	1	1576	28%
	2	943	17%
	3	602	11%
	4 OR MORE	777	14%
	Total	5692	100%

Figure 2: ACE Score comparison between NCS-R and CDC Samples
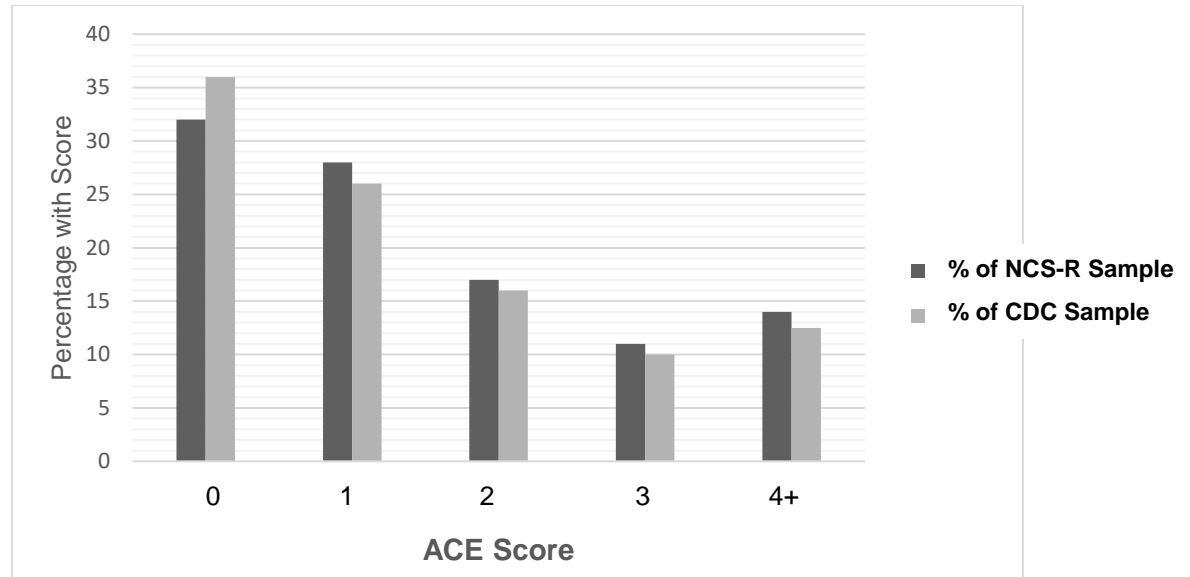
ACE prevalence in current study. ACE prevalence in current study varies slightly from the CDC-Kaiser study (see Figure 2 for comparison). This may be attributable to changes in ACE categories in the present study based on available variables in the NCS-R. Notably, emotional abuse data was not available in the NCS-R. Therefore, to account for a tenth ACE factor, family poverty (as a dimension of the "Risky Family Environment" category) was introduced. This substitution does not imply that emotional abuse and childhood poverty are equivalent, only that family poverty is another dimension of childhood adversity (Fiscella & Williams, 2004; Shonkoff, Garner, Siegel, Dobbins, Earls, Mcguinn, et al., 2012) Other variables such as parental mental illness included additional data points than the one question in the CDC-Kaiser Study. For example, in the present study, parental mental illness is a combination of six variables:

1. Growing up-mother/woman had periods of sadness for 2+ weeks
2. Growing up-mother/woman constantly anxious/nervous for 1+ month

3. Growing up-mother/woman attempted to commit suicide

4. Growing up-father/man had periods of sadness for 2+ weeks

5. Growing up-father/man constantly anxious/nervous for 1+ month

6. Growing up-father/man attempted to commit suicide

Therefore, the additional data points may have resulted in increased prevalence of

ACE in the study population compared to the CDC-Kaiser study. However, the overall

rates of ACE in the current study are similar in distribution to the CDC-Kaiser study.

Inferential Data Analysis

Inferential data analysis was used to determine if there was an association

between the independent variable, the control variables and the three dependent variables

comprising the dimensions of attitudes toward seeking professional help. Analysis was

applied to the sample size N=5692. A Complex Samples Data Analysis Plan was first

developed to factor in the effect of stratification, clustering and sample weights. Then, the

IBM SPSS v. 25 Complex Samples function was used for all data analysis. Total ACE

score was collapsed into five categories to match the distribution categories in the CDC

study. First, Chi-square Test for Independence was run to determine group differences in

categorical variables. Then, the bivariate correlations were assessed for associations

between continuous variables. Finally, hierarchical logistic regression was performed to

test the influence of the ACE Score on attitudes toward seeking professional help, while

controlling for sociodemographic, treatment use, and psychiatric need factors.

Group comparisons and bivariate relationships. This level of analysis first

focused on comparing sociodemographic group proportions with the three dimensions of

help-seeking (intent, self-disclosure and social stigma). A Chi Square Test of

Independence was used to determine if any differences exist between sociodemographic

groups among each of the three dimensions of attitudes toward seeking professional help.

See tables 7-9.

Table 7. Crosstabulation of Sociodemographic/Predisposing Factors and Being Likely to Seek Professional Help for Serious Emotional Problems (Help-Seeking Intent)

Sociodemographic/ Predisposing Factors	Would Seek Professional Help		X^2 (df)	Sig. (p)
	Yes	No		
Gender				
Female	87.2%	12.8%	58.1 (1)***	.000
Male	79.8%	20.2%		
Age				
18 - 25	76.9%	23.1%		
26 - 44	84.2%	15.8%		
45 - 54	86.7%	13.3%	45.7 (3.21)**	.002
55 - 64	87.2%	12.8%		
65+	84.0%	16.0%		
Education				
Not a High School Graduate	80.3%	19.7%	15.6 (2.25)*	.049
High School Graduate	83.3%	16.7%		
Some College	84.0%	16.0%		
College Graduate or Higher	86.4%	13.6%		
Race				
Asian	67.8%	32.2%		
Hispanic/Latino	80.6%	19.4%		
African American	87.1%	12.9%	28.9 (3.82)*	.011
White Non-Hispanic	84.1%	15.9%		
Other	81.6%	18.4%		
Marital Status				
Married/cohabiting	85.3%	14.7%		
Divorced/separated/ widowed	86.5%	13.5%	51.0 (1.96)***	.000
Never married	77.4%	22.6%		

Table 7, continued.

Sociodemographic/ Predisposing Factors	Would Seek Professional Help		X² (df)	Sig. *(p)*
	Yes	No		
Financial Insecurity In the past year, had enough money to meet needs				
YES	84.2%	15.8%	1.50 (1)	.412
NO	82.8%	17.2%		
Insurance Status				
Insured	84.8%	15.2%	32.2 (1)**	.001
Not insured	76.5%	23.5%		

*p < .05, ** p < .01, *** p < .001*
df = degrees of freedom
(N.B. degrees of freedom is not a whole number due to the weighting of data and sampling design. The value for degrees of freedom in complex samples is calculated as the difference between the number of primary sampling units and the number of strata in the first stage of sampling.)

In terms of sociodemographic groups and respondents who endorsed willingness to seek professional help for emotional problems (as a proxy for help seeking intent), some significant differences were found between groups. A higher proportion of females than males said that they would seek professional help (87 vs. 79%). Among age groups, young adults (18-25) had the lowest percentage of respondents endorsing help-seeking intent (77%). Help-seeking intent increased with age—from 77% of 18-25 to 87% of 55-64 (from 77 to 87%). However, a lower proportion of seniors (84%) than respondents in all other age categories except young adults were willing to seek help. Help-seeking intentions also increased with educational level, from 80% of respondents who did not graduate high school to 86% of those with a college degree stating they would be willing to seek professional help.

Among the race/ethnicity category, a significantly lower proportion of Asians

report help-seeking intentions compared to other racial and ethnic groups (68%). African

American participants were most likely to endorse willingness to seek help (87%) than

either Hispanic/Latino (81%) or non-Hispanic whites (84%). For other sociodemographic

groups: the "never married" group had the least intentions to seek help (74%) versus

respondents who were "divorced, separated or widowed (87%)" or "married/cohabitating

(85%);" insured respondents endorsed help seeking intentions at significantly higher

proportions than non-insured respondents (85 vs. 77%). However, there was no

significant difference between respondents experiencing financial insecurity and

endorsing willingness to seek professional help for emotional problems.

The next table (Table 8), examines sociodemographic group comparisons and the

second dimension of professional help-seeking—respondents endorsing likelihood of

feeling comfortable talking to a professional about personal problems (as a proxy for self-

disclosure).

Table 8. Crosstabulation of Sociodemographic/Predisposing Factors and Feeling Comfortable Talking to a Professional About Emotional Problems (Self-Disclosure)

Sociodemographic/ Predisposing Factors	Would Feel Comfortable Talking to a Professional			
	Yes	No	X^2 (df)	Sig. *(p)*
Gender				
Male	80.4%	19.6%	4.87 (1)	.229
Female	78.0%	22.0%		
Age				
18 - 25	76.3%	23.7%		
26 - 44	78.4%	21.6%	17.34 (3.01)	.220
45 - 54	80.4%	19.6%		
55 - 64	84.4%	15.6%		
65+	79.3%	20.7%		
Education				
Not a High School Graduate	78.8%	21.2%		
High School Graduate	75.8%	24.2%	62.46 (2.35) ***	.000
Some College	82.5%	17.5%		
College Graduate or Higher	84.4%	15.6%		
Race				
Asian	80.2%	19.8%		
Hispanic/Latino	78.8%	21.2%		
African American	76.2%	23.8%	13.92 (3.61)	.207
White Non-Hispanic	80.2%	19.8%		
Other	69.2%	30.8%		
Marital Status				
Married/cohabiting	73.8%	26.2%		
Divorced/separated/ widowed	82.4%	17.6%	22.99 (1.89)*	.011
Never married	74.9%	25.1%		
Insurance Status				
Insured	80.1%	19.9%	33.59 (1)*	.012
Not insured	74.2%	25.8%		

Table 8, continued.

Sociodemographic/ Predisposing Factors	Would Feel Comfortable Talking to a Professional		X^2 (df)	Sig. (p)
	Yes	No		
Financial Insecurity In the past year, had enough money to meet needs				
YES	81.4%	18.6%	33.59 (1)***	.000
NO	74.2%	25.8%		

*p < .05, ** p < .01, *** p < .001*
df = degrees of freedom

Reviewing sociodemographic groups and respondents who endorsed feeling comfortable with self-disclosure, some significant differences were found between groups. In contrast with intention to seek help, there were no significant between group comparisons in terms of gender, age, or race/ethnicity in level of comfort with self-disclosure to a professional. However, increased level of comfort with self-disclosure was significantly higher among participants who were more educated, divorced, separated or widowed, were insured and had enough money to meet their needs. Regarding level of education, being more educated was associated with increased comfort level with talking to a professional about personal problems: 84% of respondents who were college graduate endorsed feeling comfortable with talking to a professional, while only 76% of high school graduates did.

Among the marital status groups, the "married/cohabitating" group were the least comfortable talking to a professional (74%), followed by "married/cohabitating (75%)." Respondents who were "divorced, separated or widowed" had the highest percentage

(82%) who endorsed feeling comfortable with self-disclosure. Insured respondents

endorsed help seeking intentions at significantly higher proportions than non-insured

respondents (80 vs. 74%). And, unlike with help-seeking intentions, financial insecurity

was significantly associated with lower rates of respondents endorsing feeling

comfortable disclosing personal information to a mental health profession. Participants

who endorsed having enough money to meet their financial needs were more likely to

feel comfortable with self-disclosure than those who did not have enough money to meet

their needs (81 vs. 74%).

The next table (Table 9), examines sociodemographic group comparisons and the

third dimension of professional help-seeking—respondents endorsing likelihood of

feeling embarrassed over getting professional help (as a proxy for social stigma).

Table 9. Crosstabulation of Sociodemographic/Predisposing Factors and Feeling Embarrassed Over Getting Professional Help (perceived social stigma)

Sociodemographic/ Predisposing Factors	Would Feel Embarrassed Over Getting Professional Help		X^2 (df)	Sig. *(p)*
	Yes	No		
Gender				
Male	37.0%	63.0%	29.55 (42) ***	.000
Female	30.0%	70.0%		
Age				
18 - 25	31.2%	68.8%		
26 - 44	38.9%	61.1%		
45 - 54	32.8%	67.2%	55.04 (2.97) ***	.000
55 - 64	25.7%	74.3%		
65+	29.1%	70.9%		
Education				
Not a High School Graduate	30.6%	69.4%		
High School Graduate	30.9%	69.1%	21.08 (2.86) *	.019
Some College	33.6%	66.4%		
College Graduate or Higher	38.0%	62.0%		
Race				
Asian	39.5%	60.5%	14.38 (2.98)	.146
Hispanic/Latino	29.9%	70.1%		
African American	28.6%	71.4%		
White Non-Hispanic	34.5%	65.5%		
Other	31.7%	68.3%		
Marital Status				
Married/cohabiting	35.3%	64.7%	38.24 (1.92) ***	.000
Divorced/separated/ widowed	25.7%	74.3%		
Never married	35.1%	64.9%		

Table 9, continued.

Sociodemographic/ Predisposing Factors	Would Feel Embarrassed Over Getting Professional Help		X^2 (df)	Sig. *(p)*
	Yes	No		
Insurance Status				
Insured	33.6%	66.4%	2.45 (42)	.297
Not insured	30.7%	69.3%		
Financial Insecurity				
In the past year, had enough money to meet needs				
YES	33.9%	66.1%	5.25 (42)	.073
NO	30.6%	69.4%		

*p < .05, ** p < .01, *** p < .001*
df = degrees of freedom

Reviewing sociodemographic groups and respondents who endorsed not feeling embarrassed if friends knew they were getting professional help (as a proxy for social stigma), some significant differences were found between some of the sociodemographic groups. A higher proportion of females said that they would not feel embarrassed over getting professional help (70% vs. 63% of males). Among age groups, 55-64 year-olds experienced social stigma at lower rates that all other age groups (74% endorsed not feeling embarrassed). In comparison, the 26-44 age group was the most likely to endorse experiencing social stigma (61% endorsed not feeling embarrassed). Two additional sociodemographic groups had significant differences—marital status and education level. Experienced social stigma increased with education: 69% of respondents who were not high school graduates said they would not feel embarrassed, while only 62% of respondents had a college degree or higher said so. Regarding marital status, divorced,

separated or widowed respondents endorsed not feeling embarrassed over getting

professional help at higher proportions than respondents who were either married or

never married (74% versus 65% for both married or never married).

Sociodemographic group comparisons and ACE score. The next analysis

compared sociodemographic groups with ACE score. A Chi Square Test of Independence

was used to determine if any differences exist between sociodemographic groups and

ACE Score (See Table 10). Then, ACE Score was compared with the three dimensions of

help-seeking (intent, self-disclosure and social stigma). A Chi Square Test of

Independence was used to determine if any differences exist between ACE Score

(collapsed into five categories—zero, one, two, three and four or more) and each of the

three dimensions of attitudes toward seeking professional help. See tables 11-13.

Table 10. Group comparison Table – Crosstabulation of Sociodemographic/Predisposing Factors and ACE Score in Five Groups

Groups	% of respondents by ACE Score					X^2 (df)	Sig. (*p*)
	0	1	2	3	4+		
Gender							
Male	33.8%	29.4%	16.0%	10.4%	10.5%	52.0 (3.56)***	.000
Female	29.5%	26.2%	17.1%	10.8%	16.5%		
Education							
Not a High School Graduate	27.5%	26.8%	17.2%	11.9%	16.7%		
High School Graduate	29.7%	28.4%	16.9%	9.8%	15.3%	70.5 (7.37)**	.001
Some College	30.1%	27.0%	17.5%	11.7%	13.7%		
College Graduate or Higher	38.6%	28.3%	14.6%	9.4%	9.1%		
Race							
Asian	44.0%	29.4%	12.7%	7.3%	6.5%		
Hispanic/Latino	28.7%	26.3%	14.6%	14.0%	16.4%		
African American	21.6%	32.7%	19.6%	11.9%	14.1%	100 (9.29)***	.000
White Non-Hispanic	33.6%	27.2%	16.5%	9.9%	12.8%		
Other	20.6$	22.5%	14.3%	12.0%	30.6%		
Marital Status							
Married/cohabiting	33.7%	26.9%	17.2%	10.2%	12.1%		
Divorced/separated/widowed	27.4%	28.2%	18.3%	9.8%	16.3%	42.2 (5.72)*	.014
Never married	29.9%	29.2%	13.6%	12.2%	15.1%		
Insurance Status							
Insured	33.3%	28.1%	16.1%	10.2%	12.3%	103 (3.48)***	.000
Not insured	19.6%	24.7%	19.9%	13.3%	22.6%		
Financial Insecurity							
Had enough money to meet needs	34.2%	28.5%	16.4%	9.2%	11.6%	121 (3.59)***	.000
Did not have enough money to meet needs	23.5%	25.3%	17.3%	14.3%	19.6%		

* p < .05, ** p < .01, *** p < .001
df = degrees of freedom

There were significant differences between all sociodemographic groups and ACE Score (divided into five categories). A higher proportion of females than males had four or more ACEs (17% vs. 11%). Regarding educational level, a higher proportion of respondents with four or more ACEs had not graduated high school versus had college degrees or higher (17% vs. 9%). Stated another way, 39% of respondents with zero ACE had a college degree or higher, compared with only 9% of respondents with four or more ACEs.

Among the race/ethnicity category, Asians had the lowest proportion (7%) with four or more ACEs, while respondents who identified as "other" in the race/ethnicity category had the highest proportion (31%). Latinos had the second highest proportion of four or more ACEs (16%), followed by African American (14%), and non-Hispanic whites (13%). Respondents with four or more ACEs were more likely to be either "divorced, separated or widowed (16%)" or "never married (15%)," than married (12%). Regarding economic factors, respondents with zero ACE were proportionately more likely to be insured (33% vs. 12%), and have enough money to meet their needs (34% vs. 12%) than respondents with four or more ACEs.

Predisposing factors, psychiatric need factors and ACE score. Next, ACE Score was compared with treatment utilization and psychiatric need factors. Again, a Chi Square test of Independence was used to determine if any differences exist between ACE score and previous professional treatment history, history of suicidal behavior, and 12-month prevalence of psychopathology. See Table 11.

Table 11. Association: ACE Score versus Psychiatric Treatment Utilization and Psychopathology (Enabling and Psychiatric Need Factors)

| | ACE SCORE | | | | | Test of Independence | |
	0	1	2	3	4 +	X^2***	df
Had counseling/ therapy for 30 min or more	19.2%	27.7%	35.9%	46.8%	47.7%	305	3.41
Was prescribed psychiatric medication	16.8%	20.5%	26.8%	29.5%	37.9%	158	3.05
Had overnight hospital stay for mental health	2.3%	2.6%	5.7%	5.3%	6.9%	46	2.90
Suicide attempt/ Ideation (lifetime)	6.0%	12.6%	19.4%	21.4%	34.5%	298	2.95
Depressive Disorder (12-mo)	4.2%	6.7%	9.0%	11.2%	17.8%	146	3.68
Anxiety Disorder (12-mo)	11.5%	6.8%	22.4%	26.2%	38.9%	281	3.67
Bipolar Disorder (12-mo)	1.3%	2.4%	2.7%	3.3%	7.4%	73	3.51
Substance Use Disorder (12-mo)	1.5%	3.1%	4.3%	5.6%	8.8%	85	2.39

***$p < .001$ for all groups

There were significant differences between participants with zero ACE and those with four or more. 48% of respondents with four or more ACEs had professional psychological counseling or therapy for 30 minutes or more compared to only 19% of respondents with zero ACE. Respondents with four or more ACEs had higher proportions than those with zero ACE of being prescribed medication for emotional or mental health reasons (38% vs. 27%), and of having been admitted overnight for problems with emotions, mental health or use of alcohol or drugs (7% vs. 2%).

Participants with four or more ACEs had higher proportions than those with zero ACE in all psychopathology factors. The disparity was greatest for suicidal behavior: 35% of respondents with four or more ACEs had attempted suicide or had serious suicidal ideation in their lifetime compared with only 6% of respondents with zero ACE. Anxiety disorders also had a wide difference in proportions: 39% of respondents with four or more ACEs met diagnostic criteria for an anxiety disorders in the previous 12-months, compared to 12% of respondents with zero ACE. There were significant group differences between participants with four or more ACEs compared to those with zero ACE in the 12-month prevalence for all other disorders as well: depressive disorder (18% vs. 4%), bipolar disorder (7% vs. 1%), and substance abuse or dependence (9% vs. 2%). See Figures 3-11.

Figure 3. Percentage of Respondents Who Endorsed Ever Having a Therapy Session with a Professional for 30 minutes or more, by Number of ACEs

ACE Score
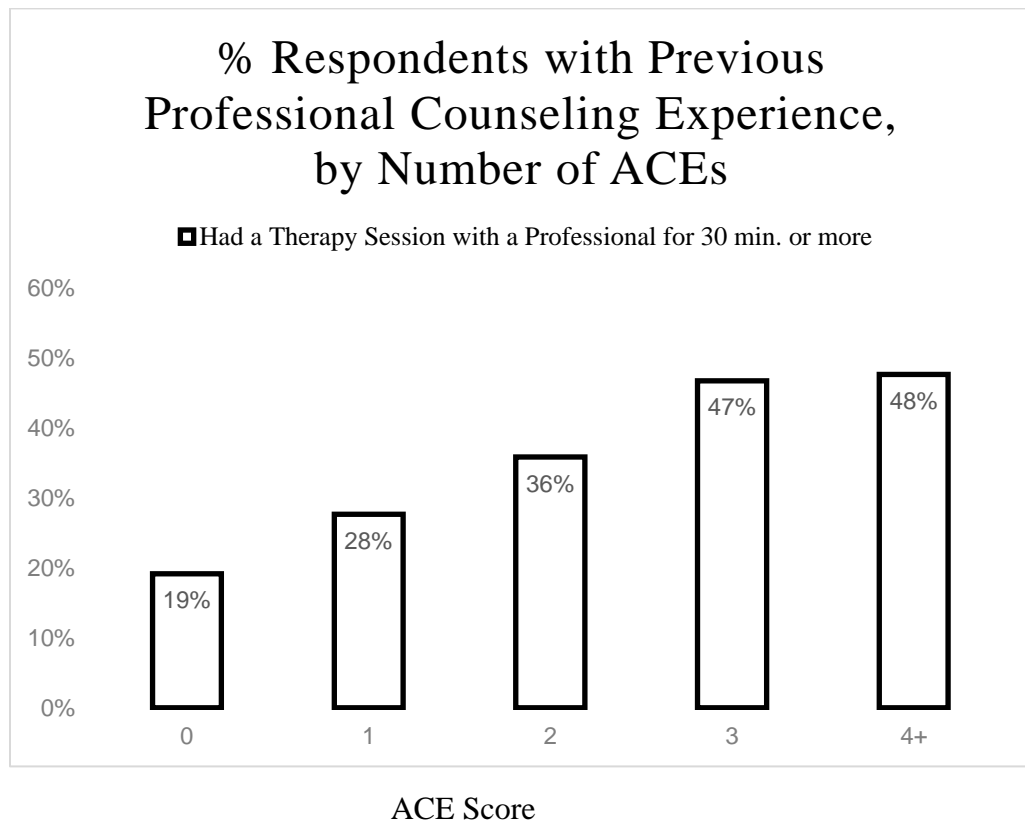
Figure 4. Percentage of Respondents Who Endorsed Ever Being Prescribed Medication by a Professional for Emotional or Alcohol/Drug Problem, by Number of ACEs

% Respondents with Previous Psychiatric Medication Experience, by Number of ACEs

◻ Was Prescribed Medication for Emotional or Alcohol/Drug Problems

ACE Score
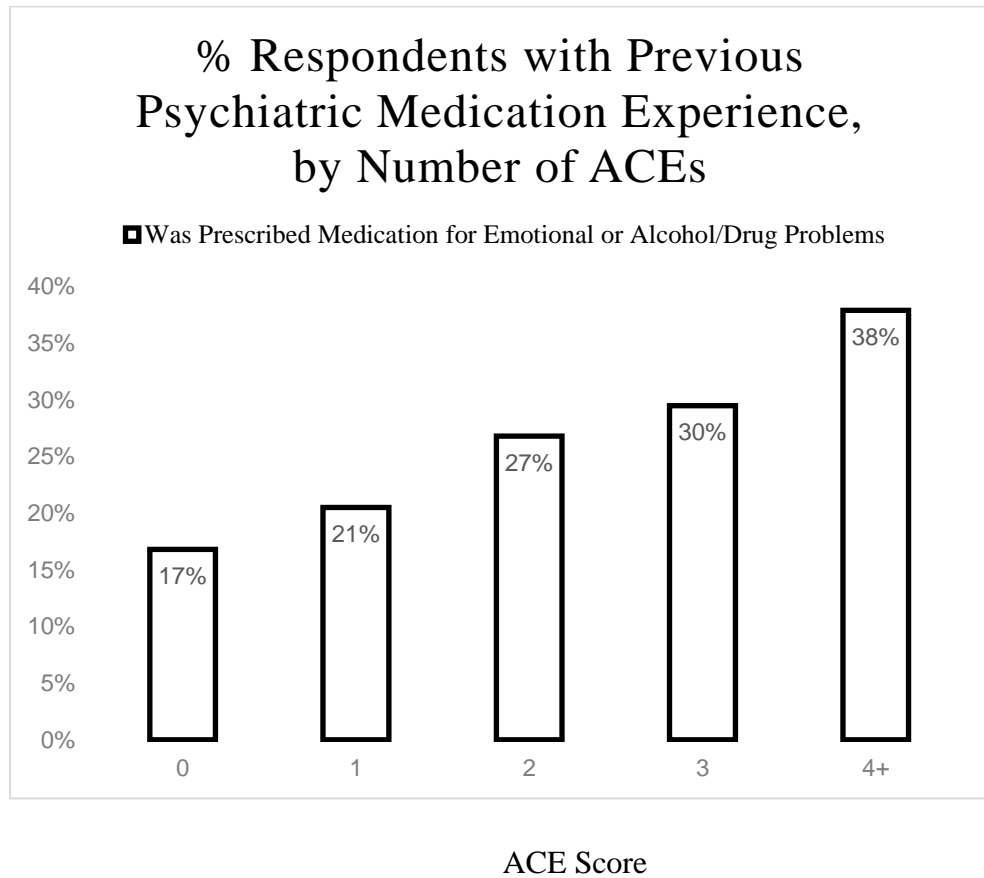
Figure 5. Percentage of Respondents Who Endorsed Ever Having an Overnight Stay at a Hospital or Other Facility for Emotional or Drug/Alcohol Problems, by Number of ACEs

ACE Score
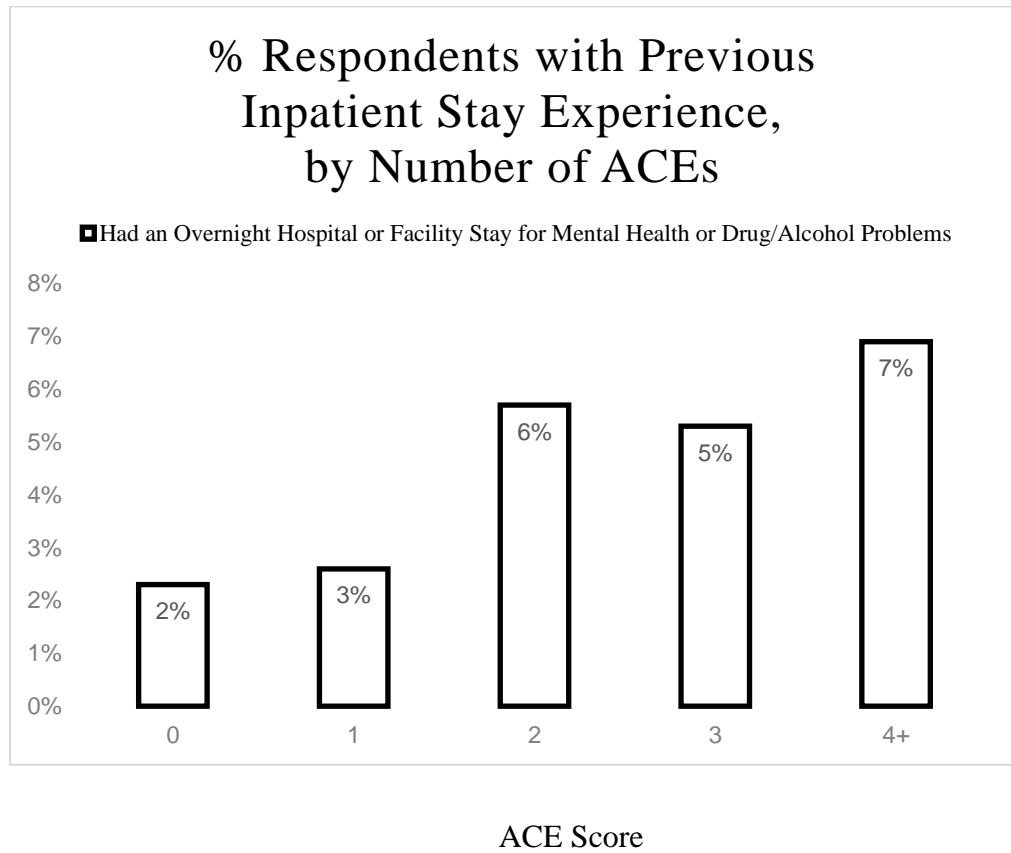
Figure 6. Percentage of Respondents Who Endorsed Ever Attempting Suicide or Having
Seriously Thought About Committing Suicide, by Number of ACEs

% Respondents with Previous Suicide Attempt or Serious Ideation, by Number of ACEs

□Past Attempted Suicide or Serious Ideation
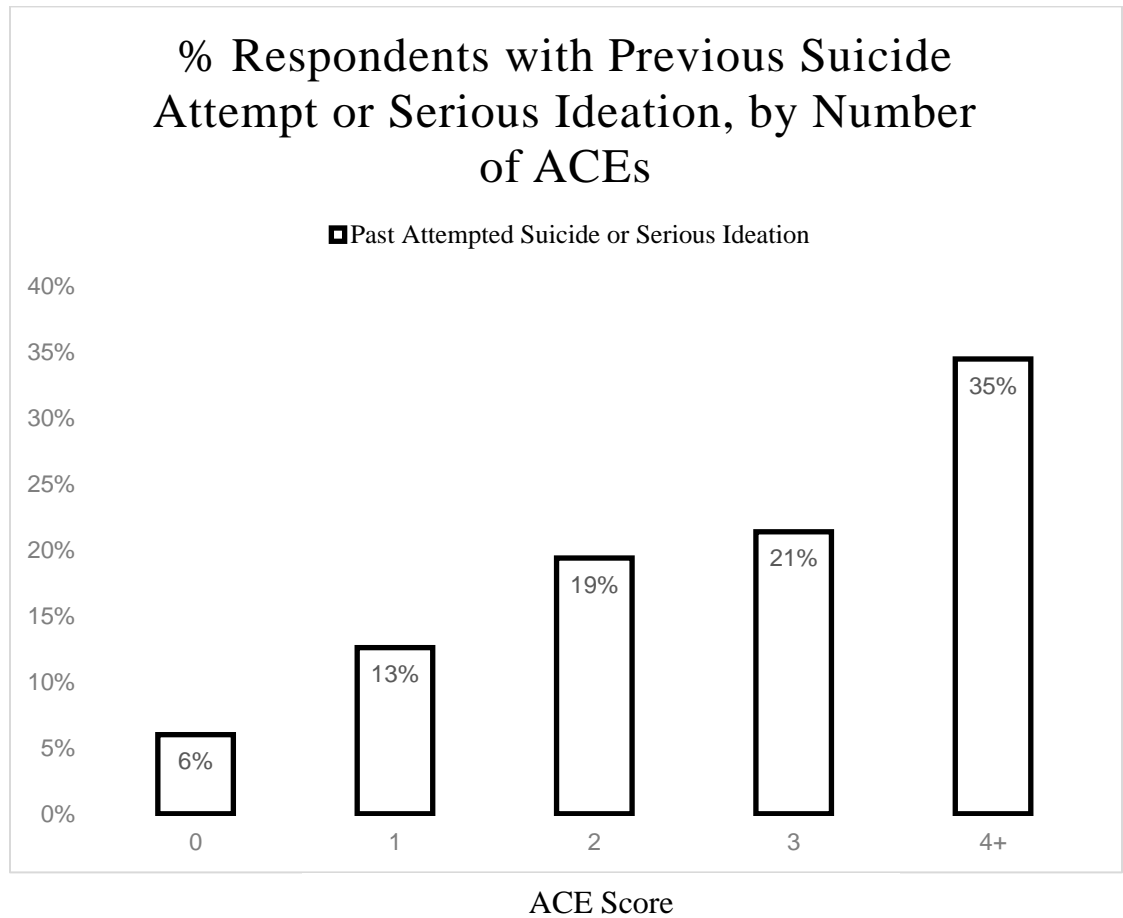
Figure 7. Percentage of Respondents Who Met DSM-IV Diagnostic Criteria for Depressive Disorder in the Past 12-month Period, by Number of ACEs

% Respondents with Depressive Disorder in the Past 12 months, by Number of ACEs

□ Had a Depressive Disorder in the Past 12-months
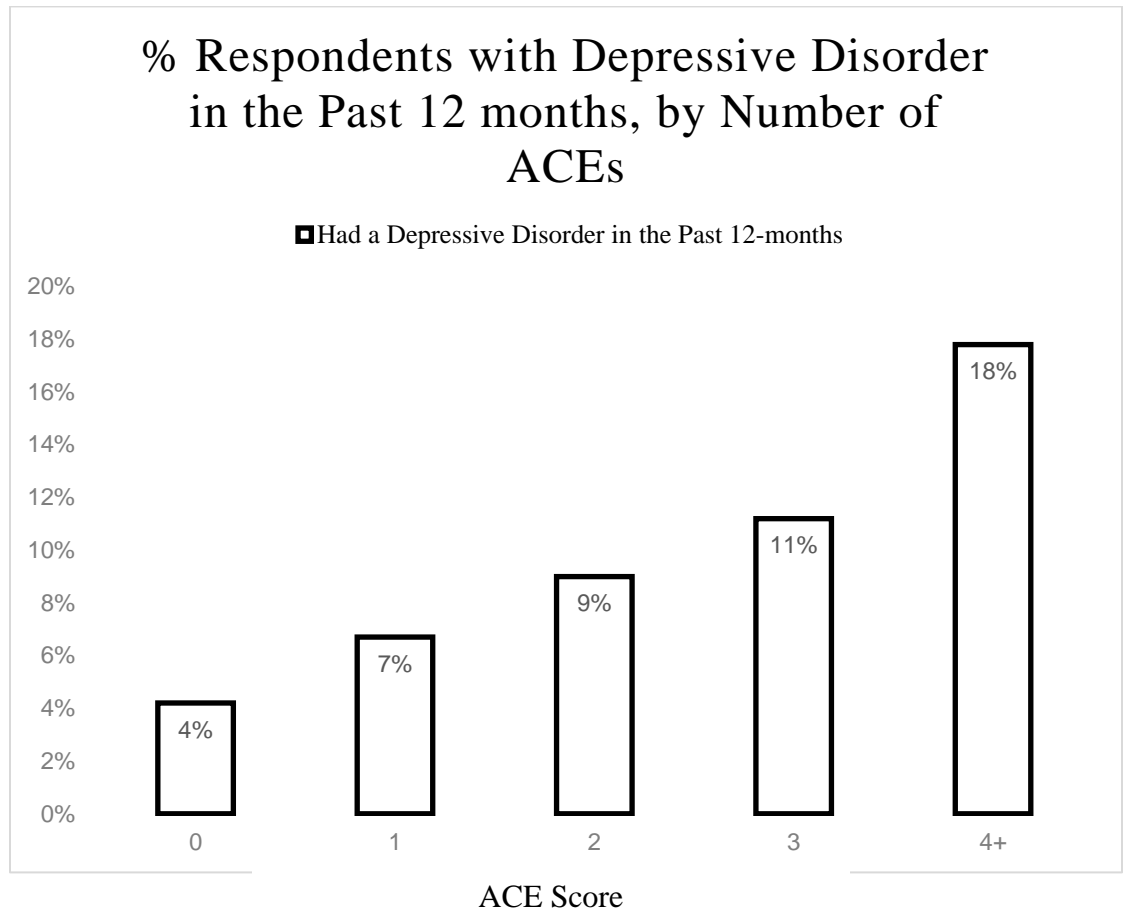
Figure 8. Percentage of Respondents Who Met DSM-IV Diagnostic Criteria for Anxiety Disorder in the Past 12-month Period, by Number of ACEs
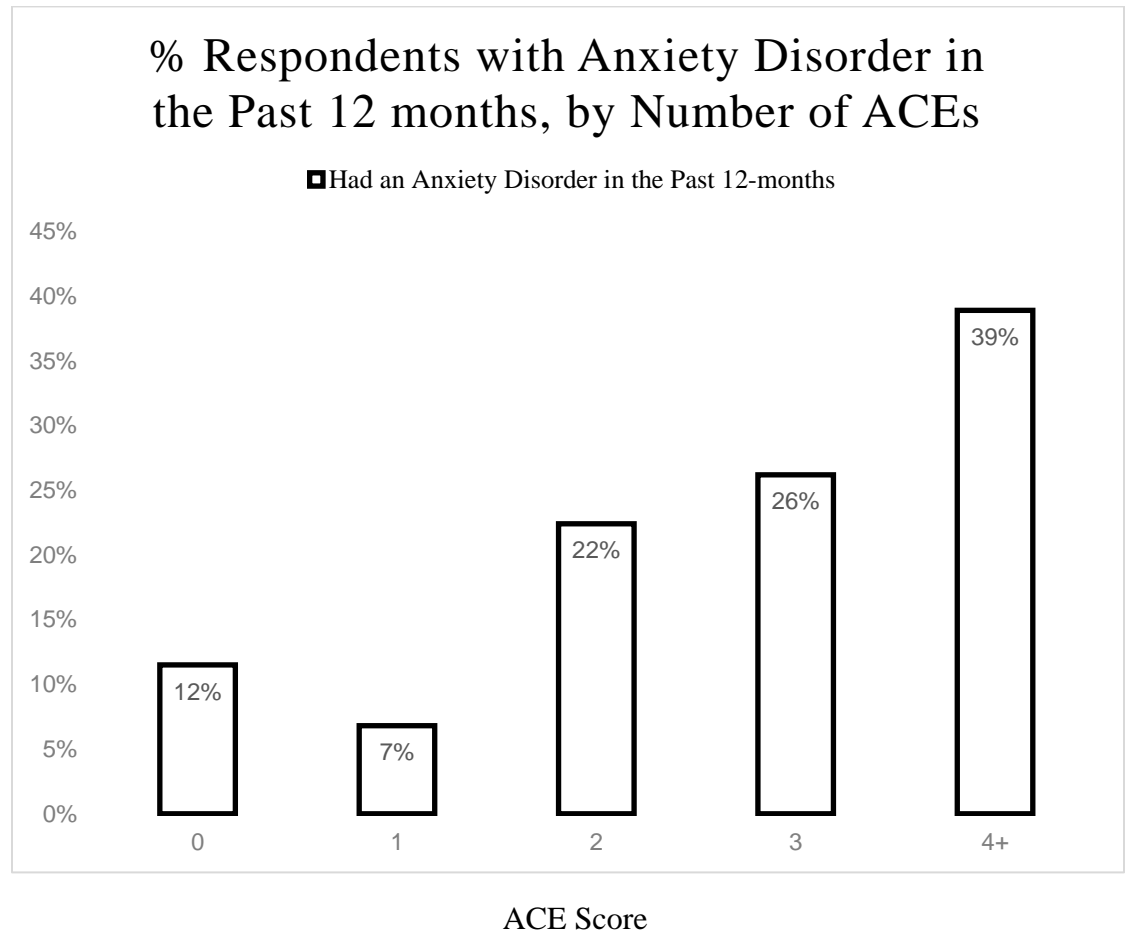
Figure 9. Percentage of Respondents Who Met DSM-IV Diagnostic Criteria for Bipolar Disorder in the Past 12-month Period, by Number of ACEs
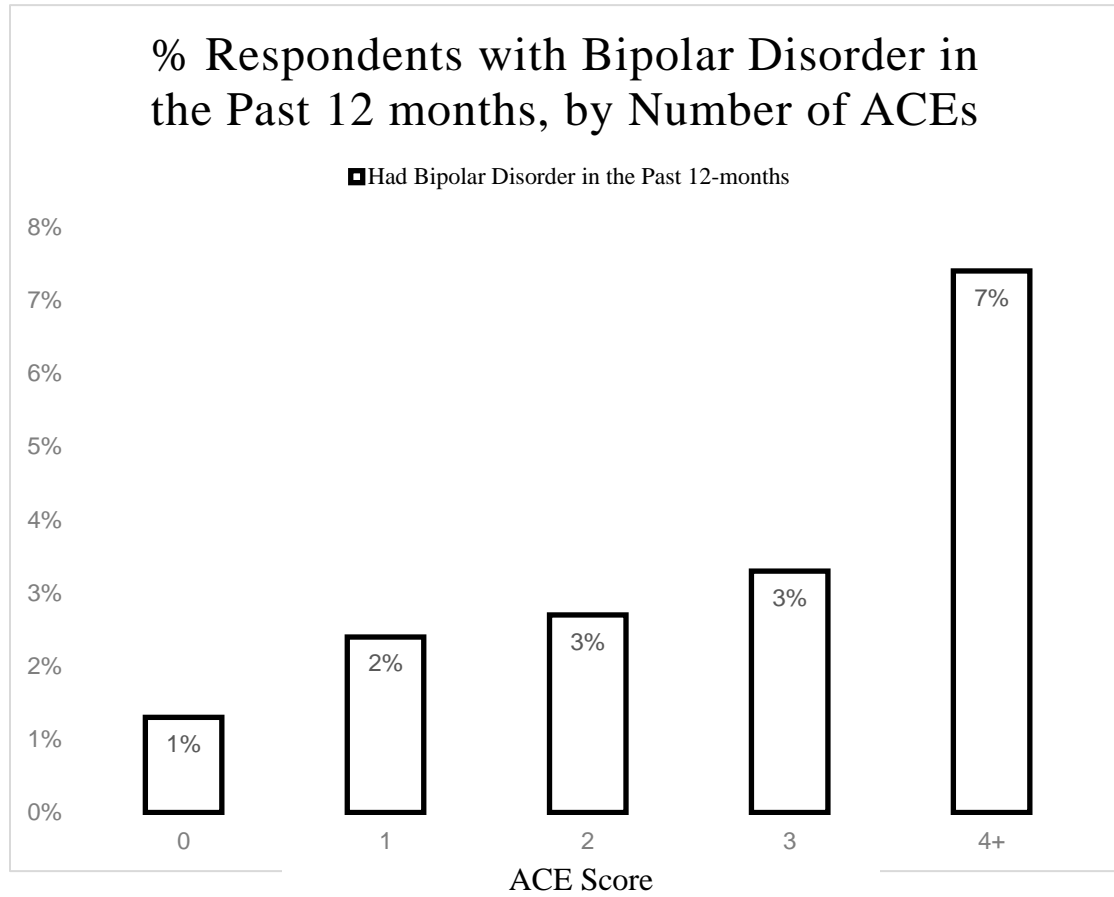
Figure 10. Percentage of Respondents Who Met DSM-IV Diagnostic Criteria for Substance Abuse or Dependence in the Past 12-month Period, by Number of ACEs

% Respondents with Substance Abuse Or Dependence in the Past 12 months, by Number of ACEs

■Had a Substance Use Disorder in the Past 12-months
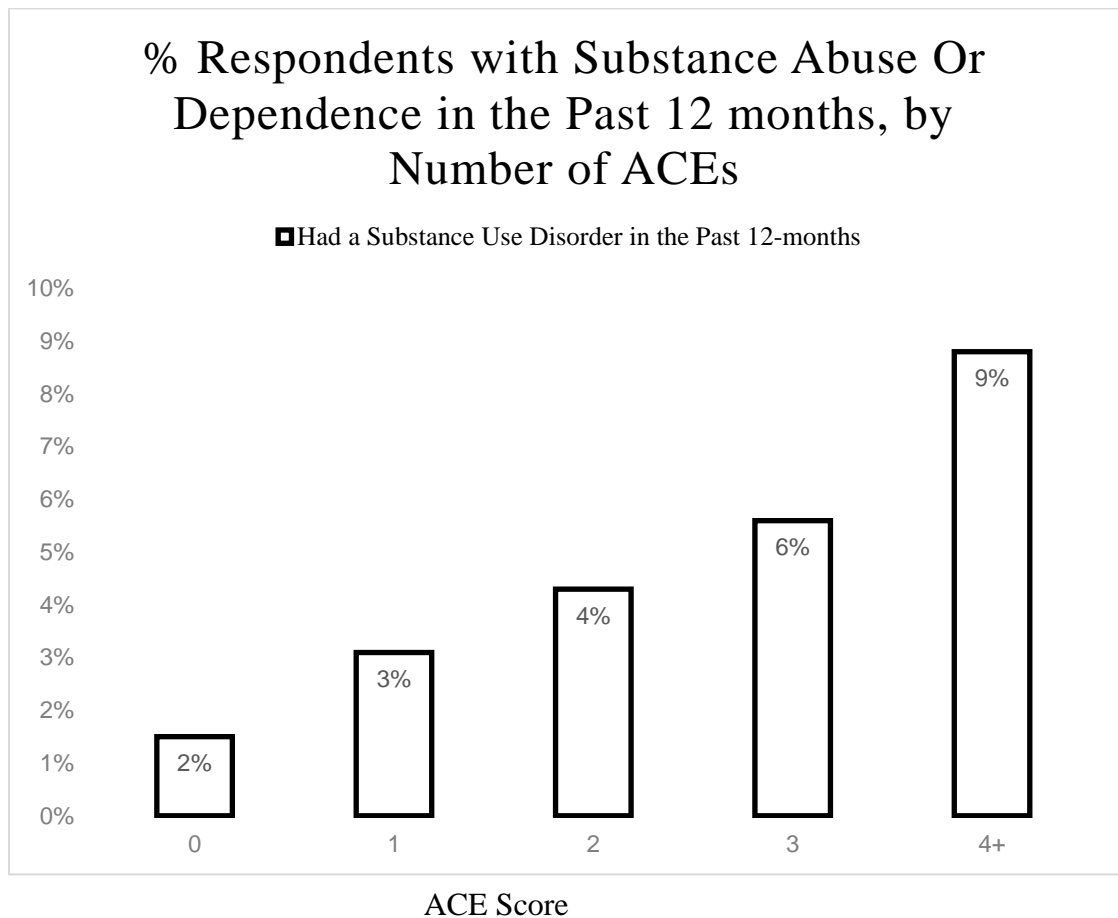
ACE Score

ACE score and help-seeking dimensions. A crosstabulation analysis was run on ACE score and the three dimensions of help-seeking (intent, self-disclosure and social stigma). A Chi Square Test of Independence was used to determine if any significant differences exist between ACE Score (collapsed into five categories—zero, one, two, three and four or more) and each of the three help-seeking variables: (1) probability of seeking professional help (used as a proxy for help-seeking intent), (2) comfort level with taking to a professional about personal problems (used as proxy for self-disclosure), and (3) perceived embarrassment over getting professional help for emotional problems (as a proxy for social stigma). See tables 12-14.

Table 12. Group comparison Table – Percentage of Respondents Who Would Seek Help from a Professional for a Serious Emotional Problem, by Number of ACEs

ACE Score	% of respondents saying yes	Chi square coefficient (df)	Sig. *(p)*
0	85.7%		
1	85.9%		
2	83.0%	32.7 (2.59)*	.033
3	78.3%		
4	79.9%		

p < .05
df = degrees of freedom

Figure 11. Percentage of Respondents Who Would Seek Help from a Professional for a Serious Emotional Problem, by Number of ACEs

% Respondents Who Would Seek Professional Help, by Number of ACEs

▢ Would Seek Professional Help for Emotional Problem
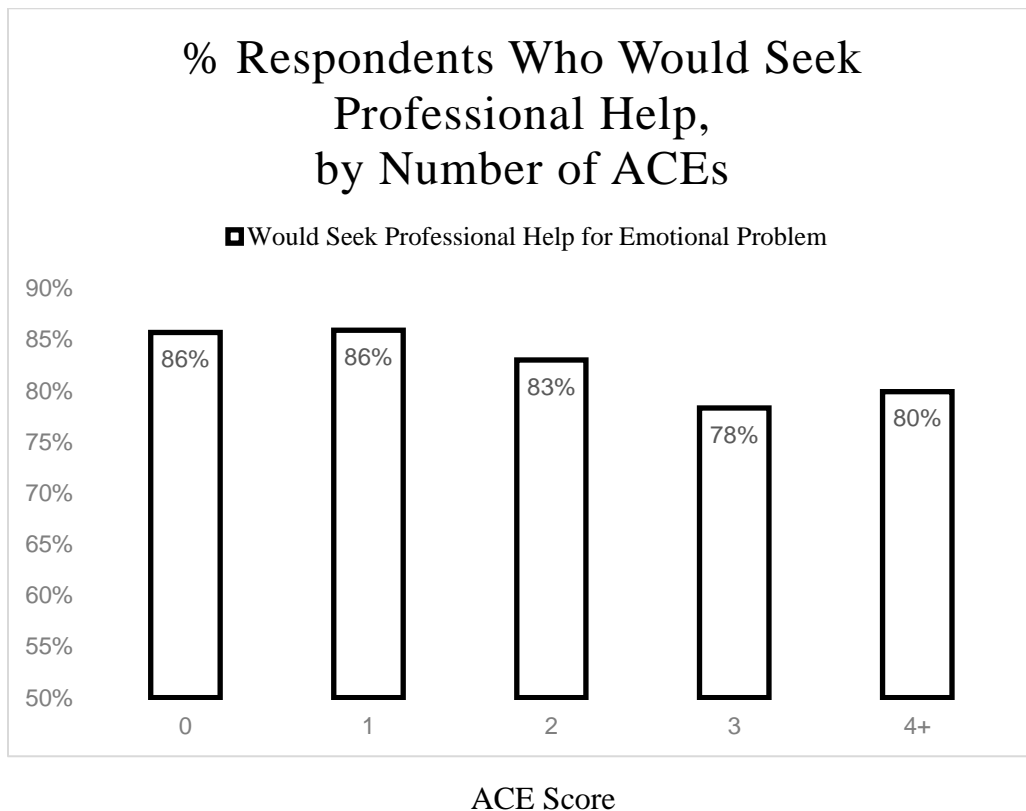
ACE Score

Table 13. Group comparison Table – Percentage of Respondents Who Would Feel Comfortable Talking to a Professional about Personal Problems, by Number of ACEs

ACE Score	% of respondents saying yes	Chi square coefficient (df)	Sig. *(p)*
0	82.2%		
1	86.8%		
2	77.9%	31.8 (3.34)**	.007
3	73.1%		
4	75.9%		

* p < .05, ** p < .01
df = degrees of freedom

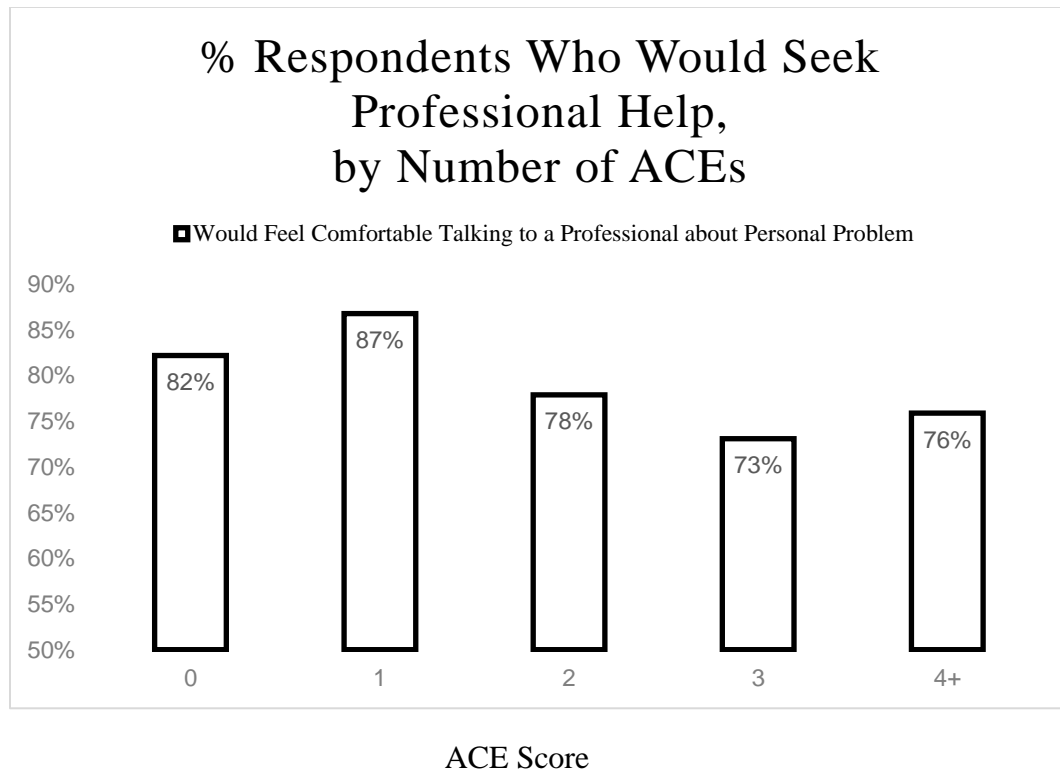**Figure 12.** Percentage of Respondents Who Would Feel Comfortable Talking to a Professional about Personal Problems, by Number of ACEs

% Respondents Who Would Seek Professional Help, by Number of ACEs

■ Would Feel Comfortable Talking to a Professional about Personal Problem

ACE Score

Table 14. Group comparison Table – Percentage of Respondents Who Would Not Feel Embarrassed if their Friends Knew They Were Getting Professional Help, by Number of ACEs

ACE Score	% of respondents saying yes	Chi square coefficient (df)	Sig. *(p)*
0	64.3%		
1	66.9%		
2	69.2%	9.84 (2.59)[a]	.170
3	69.7%		
4	66.9%		

[a] *not significant*
df = degrees of freedom

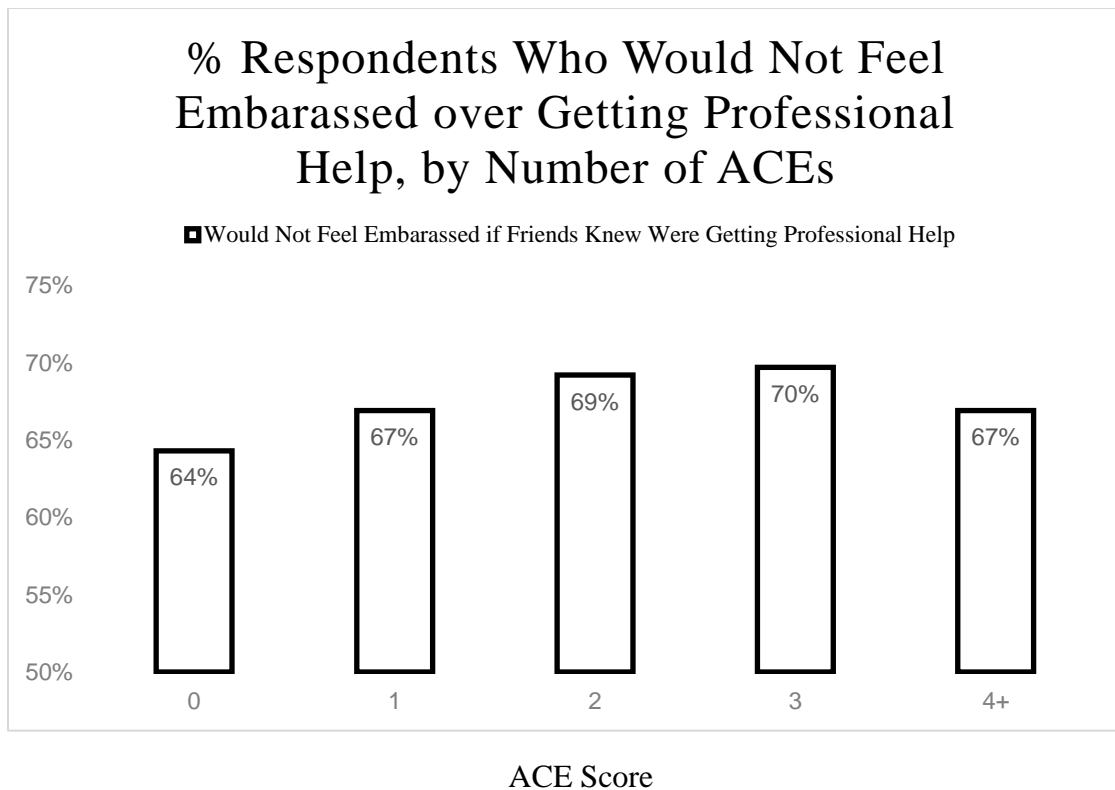**Figure 13.** Percentage of Respondents Who Would Not Feel Embarrassed if their Friends Knew They Were Getting Professional Help, by Number of ACEs

% Respondents Who Would Not Feel Embarassed over Getting Professional Help, by Number of ACEs

◼ Would Not Feel Embarassed if Friends Knew Were Getting Professional Help

ACE Score

There were significant differences in ACE score and two out of the three help-seeking dimensions—intention to seek help and level of comfort with self-disclosure. While 86% of respondents with zero ACE stated they would seek professional help for serious emotional problems, only 80% of respondents with four or more ACES said they would be willing to seek help. Regarding level of comfort with self-disclosure, 82% of respondents with zero ACE stated they would feel comfort talking to a professional about personal problems, compared to only 76% of respondents with four or more ACEs. The relation between ACE score and the probability of seeking professional help for emotional problems ($X^2(2.59) = 32.7$, $p = .033$), and the relationship between ACE score and level of comfort talking to a professional about a personal problem ($X^2(3.34) = 31.8$, $p = .007$) were both significant. However, the relationship between ACE score and level of perceived embarrassment over receiving professional help for an emotional problem was not significant, $X^2(3.59) = 9.84$, $p = .170$.

Enabling and psychiatric need factors and help-seeking. Following Andersen's (1995) Socio-Behavioral Model of Health Service Use, a crosstabulations analysis was run on enabling and psychiatric need factors, and each dimension of help-seeking. Enabling/impeding factors include previous treatment history and past suicidal behaviors, while psychiatric need factors include clinically significant psychiatric disorders in the past 12-month period. The crosstabulations analysis was used to determine the percentage of respondents who endorsed each dimension of help-seeking. In addition, a Chi-Square Test of Independence was performed to test the significance of group differences, as well as the odds ratio (OR) and 95% confidence interval (CI) for each of the three help-seeking variables. Tables 15-17.

Table 15. Crosstabulation of Enabling and Psychiatric Need Factors as Predictors of Willingness to Seek Professional Help for Serious Emotional Problems

Group		% Willing to Seek Professional Help for Emotional Problems		X^2	Sig. (*p*)	OR	CI
		Yes	No				
Had counseling 30+ minutes or more							
	Yes	88.4%	11.6%	40.67***	.000	1.71	1.48-1.99
	No	81.6%	18.4%				
Was prescribed medications for mental health reasons							
	Yes	89.1%	10.9%	37.76***	.000	1.79	1.41-2.29
	No	82.0%	18.0%				
Had inpatient stay for mental health reasons							
	Yes	83.5%	16.5%	1.38	.240	.089	.565-1.16
	No	80.4%	19.6%				
Past Suicidal Behavior							
	Yes	81.3%	18.7%	5.77*	.031	.779	.621-.977
	No	84.8%	15.2%				
Depressive Disorder (12-month)	Yes	83.8%	16.7%	.000	.986	1.00	.784-1.28
	No	83.7%	16.3%				
Anxiety Disorder (12-month)	Yes	82.7%	17.3%	1.21	.311	.908	.750-1.10
	No	84.0%	16.0%				
Bipolar Disorder (12-month)	Yes	81.2%	18.8%	.802	.327	.834	.576-1.20
	No	83.8%	16.2%				
Substance Use Disorder (12-month)	Yes	71.8%	28.2%	23.85***	.000	.477	.325-.708
	No	84.2%	15.8%				

* p < .05, ** p < .01, *** p < .001
degrees of freedom (*df)* = 42 for all calculations

Three enabling factors and one psychiatric need factor had a significant association with intention to seek professional help. Significant associations were expressed in terms of odds ratios and their corresponding 95% confidence interval. For enabling factors, respondents with a history of receiving professional counseling for 30 minutes or more were 70% more likely than respondents with no previous experience to endorse willingness to seek professional help (OR = 1.71, CI = 1.48-1.99). A history of being prescribed medication for emotional or substance abuse problems had an even larger effect on help-seeking intentions: respondents with previous experience were 80% more likely than respondents with no history of being prescribed psychiatric medication to endorse willingness to seek professional help (OR = 1.79, CI = 1.41-2.29). On the other hand, a lifetime history of serious suicidal ideation or attempt decreased the odds of being willing to seek help for emotional problems by 20% (OR = .779, CI = .621-.977) compared to participants with no past history of serious suicidal behavior. There was no significant relationship between having a history of inpatient psychiatric treatment and help-seeking intentions.

Only one psychiatric need factor had a significant association with help-seeking intent: alcohol or drug abuse or dependence in the past 12 months. Participants with a substance use disorder in the previous 12 months were 50% less likely to seek professional help than those without that disorder (OR = .477, CI = .325-.708). In terms of percentages, 84% of respondents with no substance use disorder history indicated they would seek professional help, compared with only 72% with substance abuse or dependence. No other psychiatric need factor had a significant association with professional help-seeking intent. The logistic regression model will test if these

relationships continue to be significant within the context of exposure to childhood

adversity.

Table 16. Crosstabulation of Enabling and Psychiatric Need Factors as Predictors of
Feeling Comfortable Talking to a Professional about Personal Problems

Group		% Would Feel Comfortable Talking to a Professional					
		Yes	No	X^2	Sig. (*p*)	OR	CI
Had counseling 30+ minutes or more							
	Yes	85.5%	14.5%	60.20***	.000	1.81	1.43-2.30
	No	76.4%	23.6%				
Was prescribed medications for mental health reasons							
	Yes	83.8%	16.2%	63.23***	.000	1.48	1.25-1.75
	No	77.8%	22.2%				
Had inpatient stay for mental health reasons							
	Yes	77.5%	22.5%	.274	.581	.914	.659-1.27
	No	76.2%	23.8%				
Past Suicidal Behavior							
	Yes	79.1%	20.9%	.941	.342	.908	.742-1.11
	No	80.7%	19.3%				
Depressive Disorder (12-month)							
	Yes	77.2%	22.8%	1.30	.2.37	.677	.702-1.09
	No	79.5%	20.5%				
Anxiety Disorder (12-month)							
	Yes	77.1%	22.9%	4.16	.161	.850	.676-1.07
	No	79.8%	20.2%				
Bipolar Disorder (12-month)	Yes	75.2%	24.8%	1.61	.202	.788	.547-1.13
	No	79.4%	20.6%				
Substance Use Disorder (12-month)							
	Yes	71.2%	28.8%	8.99**	.002	.633	.476-.842
	No	79.6%	20.4%				

* p < .05, ** p < .01, *** p < .001
degrees of freedom (*df)* = 42 for all calculations

Two enabling factors—previous experience with professional mental health counseling and with being prescribed psychiatric medication—had significant associations with endorsing comfort with self-disclosure to a professional. Respondents with a history of receiving professional counseling for 30 minutes or more were 80% more likely than participants with no such history to endorse feeling comfortable talking to a professional about personal problems (OR = 1.81, CI = 1.43-2.30). A history of being prescribed medication for emotional or substance abuse problems also increased the odds of endorsing feeling comfortable talking to a professional compared to those without such a history (OR = 1.48, CI = 1.25-1.75). The increase in odds ratio effect of being prescribed medication on comfort with self-disclosure was not as high as it was on help-seeking intent, however. Also, unlike with help-seeking intent, there was no significant relationship between a history of serious suicidal behavior and endorsing feeling comfortable talking to a professional about personal problems (OR = .908, CI = .742-1.11). And having a history of inpatient psychiatric treatment continued to have an insignificant association with the self-disclosure dimension of help-seeking.

As with intent, a substance use disorder in the last 12-month period was the only psychiatric need factor to have a significant association with self-disclosure. Participants with a substance use disorder in the previous 12 months were 37% less likely to endorse feeling comfortable talking to a professional about personal problems than those without an SUD (OR = .633, CI = .476-.842). Again, as with intent, no other psychiatric need factor had a significant association with self-disclosure. Logistic regression modeling will test how and if these significant associations change within the context of exposure to childhood adversity.

Table 17. Crosstabulation of Enabling and Psychiatric Need Factors as Predictors of Feeling Embarrassed Over Getting Professional Help

Group		% Would Feel Embarrassed Over Getting Professional Help					
		Yes	No	X^2	Sig. (*p*)	OR	CI
Had counseling 30+ minutes or more							
	Yes	29.3%	70.7%	18.50**	.001	1.31	1.13-1.51
	No	35.1%	64.9%				
Was prescribed medications for mental health reasons							
	Yes	29.2%	70.8%	13.13**	.003	1.28	1.01-1.50
	No	34.5%	65.5%				
Had inpatient stay for mental health reasons							
	Yes	28.1%	71.9%	2.56	.186	1.29	.879-1.90
	No	33.6%	66.4%				
Past Suicidal Behavior							
	Yes	31.3%	68.7%	.997	.439	1.09	.872-1.36
	No	33.2%	66.8%				
Depressive Disorder (12-month)							
	Yes	33.9%	66.1%	0.98	.788	.969	.765-1.23
	No	33.2%	66.8%				
Anxiety Disorder (12-month)							
	Yes	77.1%	22.9%	4.16	.161	.850	.676-1.07
	No	79.8%	20.2%				
Bipolar Disorder (12-month)	Yes	34.9%	65.1%	1.79	.253	.911	.774-1.07
	No	32.8%	67.2%				
Substance Use Disorder (12-month)							
	Yes	35.8%	64.2%	.646	.455	.890	.654-1.21
	No	33.1%	66.9%				

* p < .05, ** p < .01, *** p < .001
degrees of freedom (*df*) = 42 for all calculations

Overall, the percentage of respondents endorsing a positive attitude toward the perceived social stigma dimension of help-seeking was lower than the other two dimensions. The strength of the association, expressed in terms of odds ratios was also less with social stigma than with either intent or self-disclosure. As with the previous two dimensions, both experience with counseling and psychiatric medication continued to have significant associations with social stigma. History of counseling or medication were enabling factors that decreased perceived social stigma over getting help from a professional. Respondents with history of receiving counseling for 30 minutes or more were 31% more likely than respondents with no such history to state they would not feel embarrassed if their friends knew they were getting professional help (OR = 1.31, CI = 1.13-1.51). Similarly, participants with a history of being prescribed medication for emotional or substance abuse problems had a 28% increase in the odds of not feeling embarrassed over getting professional help compared to participants with no such history (OR = 1.28, CI = 1.01-1.50). These two enabling factors were the only ones to have a significant association with perceived social stigma. No psychiatric need factor was shown in the crosstabulation to have a significant association with feeling embarrassed over getting professional help. The increase in odds ratio effect of being prescribed medication on comfort with self-disclosure was not as high as it was on help-seeking intent, however. Also, unlike with help-seeking intent, there was no significant relationship between a history of serious suicidal behavior and endorsing feeling comfortable talking to a professional about personal problems (OR = .908, CI = .742-1.11). And having a history of inpatient psychiatric treatment continued to have an insignificant association with the self-disclosure dimension of help-seeking.

As with intent, a substance use disorder in the last 12-month period was the only psychiatric need factor to have a significant association with self-disclosure. Participants with a substance use disorder in the previous 12 months were 37% less likely to endorse feeling comfortable talking to a professional about personal problems than those without an SUD (OR = .633, CI = .476-.842). Again, as with intent, no other psychiatric need factor had a significant association with self-disclosure. Next, the logistic regression modeling used to test the association between predisposing, enabling/impeding and psychiatric need factors, and help seeking within the context of exposure to childhood adversity.

Logistic Regression

Logistic regression analysis was performed to estimate the adjusted odds ratios (ORs) and corresponding 95% confidence interval (CI) for positive attitudes toward professional help-seeking associated with ACE exposure, while controlling for predisposing factors, enabling and impeding factors, and psychiatric need factors. The four multivariate logistic regression models were developed to compute odds ratios for having a positive attitude toward professional help-seeking based on Andersen's Socio-Behavioral Model of Health Service Use. The first model tested the relationship between ACE score and each of the three dimensions of help-seeking. The following three logistic regression models adjusted progressively for predisposing factors, enabling and impeding factors, and psychiatric need factors. The four models tested the interaction between each of the three DV's (help-seeking attitudes), the IV (ACE score), and predisposing, enabling/impeding, and psychiatric need factors by entering the variables in hierarchical

blocks consistent with Andersen's (1995) Socio-Behavioral Model and additional

theoretical expectations based on prior research. See Tables 18-20.

Table 18. Result of logistic regression (LR) modeling with four progressively adjusted logistic models for Intention to Seek Professional Help for Serious Emotional Problems

Variables	Model 1 OR	Model 1 CI	Model 2 OR	Model 2 CI	Model 3 OR	Model 3 CI	Model 4 OR	Model 4 CI
ACE Score								
0	1.00	--	1.00	--	1.00	--	1.00	--
1	1.02[a]	.749-1.39	1.01[a]	.730-1.40	1.13[a]	.757-1.68	1.15[a]	.769-1.71
2	.813[a]	.581-1.14	.748[a]	.526-1.06	.790[a]	.501-1.24	.814[a]	.515-1.29
3	.601***	.365-.990	.571***	.341-.958	.556***	.318-.973	.569***	.321-1.01
4+	.663***	.471-.920	.604***	.433-.843	.617***	.452-.896	.658***	.454-.953
Predisposing Factors								
Gender								
Female			1.00	--	1.00	--	1.00	--
Male			.565***	.452-.706	.519***	.412-.653	.518***	.415-.646
Age								
18-25			.731[a]	.464-1.15	.719[a]	.447-1.16	.764[a]	.468-1.25
26-44			.862[a]	.588-1.27	.950[a]	.636-1.42	.984[a]	.647-1.50
45-55			.961[a]	.670-1.38	1.13[a]	.698-1.84	1.15[a]	.705-1.87
56-64			1.00	--	1.00	--	1.00	--
65+			.717[a]	.415-1.22	.836[a]	.530-1.44	.876[a]	.527-1.49
Race								
White non-Hispanic			1.00	--	1.00	--	1.00	--
Asian			.351**	.176-.698	.411*	.197-.856	.401*	.192-.838
Hispanic/Latino			.958[a]	.708-1.30	.890[a]	.617-1.28	.886[a]	.614-1.28
African American			1.50**	1.06-2.12	1.52[a]	.979-2.35	1.47[a]	.950-2.29
Other			.932[a]	.450-1.93	1.73[a]	.818-3.64	1.77[a]	.849-3.71
Education								
College graduate			1.00	--	1.00	--	1.00	--
Some college			.846[a]	.627-1.14	.862[a]	.588-1.26	.871[a]	.594-1.28
High school graduate			.775[a]	.583-1.03	.867[a]	.660-1.14	.875[a]	.667-1.15
Not a high school graduate			.676[a]	.456-1.00	.876[a]	.641-1.20	.886[a]	.650-1.21
Married								
Previously			1.00	--	1.00	--	1.00	--
Currently			.972[a]	.740-1.28	1.09[a]	.779-1.52	1.08[a]	.768-1.51
Never			.616*	.398-.954	.836[a]	.547-1.28	.858[a]	.559-1.32

Table 18,
continued

Variables	Model 1		Model 2		Model 3		Model 4	
	OR	CI	OR	CI	OR	CI	OR	CI
Enabling Factors								
Health Insurance								
Yes					1.35[a]	.916-1.98	1.34[a]	.783-1.55
No					1.00	--	1.00	--
Have Enough								
Money to Meet								
Needs					1.13[a]	.810-1.59	1.10[a]	.783-1.55
Yes					1.00	--	1.00	--
No								
Past Mental Health								
Treatment								
Counseling								
Yes					1.88***	1.48-2.38	1.97***	1.59-2.53
No					1.00	--	1.00	--
Medication								
Yes					1.56**	1.16-2.11	1.63**	1.20-2.21
No					1.00	--	1.00	--
Inpatient Stay								
Yes					.872[a]	.582-1.31	.904[a]	.602-1.36
No					1.00	--	1.00	--
Past Suicidal								
Behavior					.597***	.457-.779	.631***	.467-.837
Yes					1.00	--	1.00	--
No								
Psychiatric Need								
Factors								
Depressive								
Disorder (12-								
month) Yes							.977[a]	.682-1.31
No							1.00	--
Anxiety Disorder								
(12-month) Yes							.781*	.644-.948
No							1.00	--
Bipolar Disorder								
(12-month Yes							.895[a]	.514-1.56
No							1.00	--
Substance Use								
Disorder (12-								
month) Yes							.638[a]	.383-1.06
No							1.00	--

* p < .05, ** p < .01, *** p < .001, [a] not significant

degrees of freedom (*df*) = 42 for all calculations

Logistic regression modeling tested the relationship between ACE exposure and intention to professional help while progressively adjusting for predisposing, enabling and need factors. The inverse relationship between ACE score and willingness to seek professional help remained significant in all four models. ACE exposure, starting at three or more ACEs was an impeding factor to professional help-seeking. Compared with respondents with zero ACE, respondents with three or more ACEs were significantly less likely to endorse willingness to seek professional help even after controlling for predisposing, enabling/impeding, and need factors strongly associated with help-seeking and professional behavioral health care use such as being female, receipt of previous behavioral health treatment, a history of suicidal ideation, and having a psychiatric disorder in the past 12-months. Depending on the model, respondents with three or more ACE were 36-44% less likely than respondents with zero ACE to be willing to seek professional help. The first LR model tested the direct relationship between ACE Score and help-seeking intent. Participants in the NCS-R sample with three ACE had a 40% decrease in the odds of endorsing help-seeking intent compared to participants with no ACE (OR = .601, CI = .365-.990). Participants with four or more ACE had a 34% decrease in the odds of being willing to seek professional help compared to participants with zero ACE (OR = .663, CI = .471-.920). Having three or more ACE was also significantly associated with help-seeking intent compared to having zero ACE in the crosstabulation analysis as well (X^2 (2.59) = 32.7, p = .033).

Model Two introduced predisposing factors (gender, age, marital status and level of education) and continued to show a significant inverse association between ACE score and help-seeking intent: respondents with three ACE and respondents with four or more

ACE had a respective 43% (OR = .571, CI = .341-.958) and 40% (OR = .604, CI = .433-.843) decrease in odds of endorsing willingness to seek professional help for emotional problems. The inverse relationship between having three or more ACE and help-seeking intent remained significant and relatively constant after controlling for enabling factors such as health insurance status, financial insecurity, previous treatment utilization and history of suicidal behavior in Model Three (OR = .556, CI =.318-.973). The odds of endorsing help-seeking intent decreased by 38% for participants with four or more ACE (OR = .617, CI = .452-.896). After controlling for psychiatric need factors in Model Four, having three ACE was no longer significantly associated with help-seeking intent (OR = .569, CI = .321-1.01), however, having four or more ACE was still significantly associated with the help-seeking dimension. When factoring psychiatric need factors (respondent met diagnostic criteria for a depressive disorder, anxiety disorder, bipolar disorder, or substance use disorder in the past 12-months), respondents with four or more ACE had a 36% decrease in the odds of being willing to seek professional help for emotional problems compared to respondents with zero ACE (OR = .659, CI = .454-.953).

Three predisposing factors, introduced in Model Two, had a significant association with help-seeking—marital status, gender and race/ethnicity. Participants who were never married were 38% less likely to endorse help-seeking intent compared to previously married participants (OR = .616, CI = .398-.954). There was no significant difference between respondents who were currently married and those who were divorced, separated, or widowed (OR = .972, CI = .740-1.28). In addition, although marital status evidenced a significant association with help-seeking in the

crosstabulations analysis ($X^2(1.96) = 51.01$, $p < .001$), the association between marital

status and help-seeking intent did not remain significant in models three and four. Gender

remained significant and the association was stronger as enabling and need factors were

introduced in subsequent models. In Model Two, males had a 44% decrease in the odds

of endorsing help-seeking intent over females (OR = .565, CI = .452-.706). In Models

Three and Four, the decrease in odds was 48%. Of note, gender was also significantly

associated with help-seeking intent in the crosstabulations analysis ($X^2(1) = 58.08$, $p <$

.001).

Race/ethnicity was the only other predisposing factor have a significant

association with help-seeking intent in the LR modeling. Compared to white, non-

Hispanic respondents, African Americans were 50% more likely to endorse help-seeking

intent (OR = 1.50, CI = 1.06-2.12). However, the significant positive association between

being African American and help-seeking intention disappeared after introducing

enabling and need factors in subsequent models. On the other hand, being of Asian

descent was significantly associated with a 65% decrease in odds of endorsing help-

seeking intent (OR = .351, CI = .176-.698) compared to white non-Hispanic respondents.

That inverse relationship continued in Model Three (OR = .411, CI = .197-.856), and

Model Four (OR = .401, CI = .192-.838). Race/ethnicity was also significantly associated

with help-seeking intent in the crosstabulations analysis ($X^2(1) = 28.86$, $p = .011$). In the

logistic regression modeling, age and educational level were not significantly associated

with help-seeking intent, although both demonstrated a significant association with help-

seeking intent in the crosstabulations analysis.

Three enabling/impeding factors were significantly associated with help-seeking in Model Three: previous experience with behavioral health service use and suicidal behavior. When analyzing the relationship between ACE exposure and willingness to seek professional treatment, receiving counseling for 30-minutes or more in the past was the strongest predictor of help-seeking intent. Respondents with history of service utilization were 88% more likely to endorse willingness to seek help compared to respondents with no such history (OR = 1.88, CI = 1.48-2.38). When psychiatric need factors were introduced in Model Four, participants with a history of service utilization had a 97% increase in the odds of endorsing help-seeking intent compared to respondents with no such history (OR = 1.97, CI = 1.54-2.53). History of treatment utilization was also significantly associated with help-seeking intent in the crosstabulations analysis $(X^2(1) = 40.09, p < .001)$. In other words, a history of receiving professional counseling was a significant predictor of willingness to seek professional treatment, even after accounting for the help-negation effect associated with ACE exposure and other impeding factors such as suicidal behavior. A history of being prescribed medication for mental or emotional problems also increased the odds of being willing to seek professional help though the association was not as strong as with a history of counseling. Participants with a history of being prescribed psychiatric medication were 56% more likely to endorse help-seeking intent than participants with no previous psychiatric medication experience (OR = 1.56, CI = 1.16-2.11). Of note, in the crosstabulations analysis, when only looking at the association between treatment use and help-seeking intent, a history of being prescribed medication had a stronger association (OR = 1.79, CI = 1.41-2.29) with help-seeking intent than a history of receiving professional counseling

(OR = 1.71, CI = 1.48-1.99). Once ACE exposure was introduced in the logistic

regression model, however, history of receiving counseling became the strongest

predictor of help-seeking intent. The third behavioral health service use factor—having

an overnight psychiatric stay—was not associated with help-seeking in any logistic

regression model or in the crosstabulation analysis. Another enabling factor—health

insurance status—was also not significantly associated with help-seeking intent in the

logistic regression analysis, although it was significantly associated with help-seeking in

the crosstabulations analysis (X^2 (1) = 32.15, p = .001). Financial insecurity was not

significantly associated with help-seeking intent in either analysis.

The final enabling/impeding factor tested was a history of serious suicidal

ideation or a suicide attempt. Suicidality was a significant impeding factor associated

with help-seeking intent. Consistent with the literature indicating a help-negation effect

associated with suicidal behavior (Pisani et al., 2012; Rickwood et al., 2007; Yakunina et

al., 2010), respondents with a history of suicidality were significantly less likely to be

willing to seek professional help than respondents with no such history. In Model Three

with only ACE score, predisposing, and enabling factors included in the analysis,

participants with history of suicidal behavior had a 40% decrease in odds of being willing

to seek help compared to those with no such history (OR = .597, CI = .457-.779). In

Model Four, when controlling for psychiatric need factors as well, participants with

history of suicidal behavior were 37% less likely to endorse willingness to seek help

compared to individuals with no such history (OR = .631, CI = .467-.837). Considering

respondents with four or more ACEs had a significantly greater proportion of lifetime

suicide attempts and serious suicidal ideation (X^2 (1) = 298, p < .001), there may be a

synergistic downward effect on help-seeking intent between high ACE exposure and

suicidality (See Table 11, Figure 7). In addition, there was a stronger inverse association

between suicidality and help-seeking intent in the context of ACE exposure in both LR

models three and four, compared to only the direct association between suicidality and

intent found in the crosstabulations analysis (OR = .779, CI = .621-.971).

The final logistic regression model controlled for psychiatric need factors.

Anxiety was the only psychiatric disorder significantly associated with help-seeking

intent. Respondents who met clinically significant diagnostic criteria for an anxiety

disorder in the previous 12-months had a 28% decrease in odds of endorsing help-seeking

intent compared to participants with no anxiety disorder (OR = .781, CI = .644-.948). In

the crosstabulations analysis, there was no significant association between anxiety and

help-seeking intent (X^2 (1) = 1.21, p = .311). However, the crosstabulation analysis did

show a significant inverse association between substance use disorder and help-seeking

intent in the crosstabulation analysis (X^2 (1) = 23.85, p < .001). Once ACE exposure was

factored in the relationship in the logistic regression modeling, substance use disorders no

longer showed a significant association. As with the crosstabulations analysis, neither

depressive disorder nor bipolar disorder had a significant interaction effect with intention

to seek professional help in the logistic regression analysis.

Table 19. Result of logistic regression (LR) modeling with four progressively adjusted logistic models for feeling comfortable talking to a professional about personal problems (self-disclosure)

Variables	Model 1 OR	Model 1 CI	Model 2 OR	Model 2 CI	Model 3 OR	Model 3 CI	Model 4 OR	Model 4 CI
ACE Score								
0	1.00	--	1.00	--	1.00	--	1.00	--
1	.913[a]	.676-1.23	.948[a]	.701-1.28	.962[a]	.697-1.33	.981[a]	.706-1.36
2	.764**	.587-.993	.744[a]	.592-1.01	.684*	.497-.940	.704*	.506-.979
3	.590**	.406-.856	.608**	.431-.860	.560*	.349-.897	.573*	.352-.935
4+	.681**	.527-.879	.772**	.558-.934	.689*	.528-.899	.747*	.574-.973
Predisposing Factors								
Gender								
Female			1.00	--	1.00	--	1.00	--
Male			.876[a]	.683-1.26	.775*	.619-.971	.760*	.574-.963
Age								
18-25			.780[a]	.483-1.26	.889[a]	.521-1.52	.951[a]	.453-1.67
26-44			.692[a]	.452-1.06	.805[a]	.486-1.33	.841[a]	.501-1.41
45-55			.716[a]	.456-1.12	.852[a]	.523-1.39	.868[a]	.528-1.43
56-64			1.00	--	1.00	--	1.00	--
65+			.688[a]	.428-1.11	.822[a]	.510-1.33	.810[a]	.499-1.32
Race								
White non-Hispanic			1.00	--	1.00	--	1.00	--
Asian			.821[a]	.347-1.94	.839[a]	.306-2.30	.822[a]	.296-2.28
Hispanic/Latino			1.15[a]	.808-1.63	1.10[a]	.791-1.54	1.09[a]	.792-1.51
African American			.914[a]	.652-1.28	1.10[a]	.764-1.60	1.08[a]	.743-1.56
Other			.641[a]	.344-1.19	.867[a]	.446-1.69	.897[a]	.472-1.71
Education								
College graduate			1.00	--	1.00	--	1.00	--
Some college			.896[a]	.722-1.11	.875[a]	.636-1.20	.883[a]	.644-1.28
High school graduate			.572***	.427-.768	.611**	.443-.842	.614*	.445-.848
Not a high school graduate			.507***	.373-.689	.659**	.488-.891	.669*	.494-.905
Married								
Previously			1.00	--	1.00	--	1.00	--
Currently			.770[a]	.572-1.04	.850[a]	.597-1.21	.832[a]	.583-1.19
Never			.592*	.405-.865	.680[a]	.438-1.06	.691[a]	.444-1.07
Enabling Factors								
Health Insurance								
Yes					1.17[a]	.845-1.61	1.16[a]	.836-1.62
No					1.00	--	1.00	--
Have Enough Money to Meet Needs								
Yes					1.59**	1.23-2.06	1.54**	1.19-2.00
No					1.00	--	1.00	--

Table 19, continued

Variables	Model 1		Model 2		Model 3		Model 4	
	OR	CI	OR	CI	OR	CI	OR	CI
Past Mental Health Treatment								
Counseling								
Yes					1.93***	1.51-2.46	2.03**	1.57-2.62
No					1.00	--	1.00	--
Medication								
Yes					1.29*	1.02-1.62	1.37**	1.09-1.73
No					1.00	--	1.00	--
Inpatient Stay								
Yes					.891[a]	.619-1.28	.907[a]	.627-1.31
No					1.00	--	1.00	--
Past Suicidal Behavior								
Yes					.772*	.634-.940	.836[a]	.685-1.02
No					1.00	--	1.00	--
Psychiatric Need Factors								
Depressive Disorder (12-month)								
Yes							.880[a]	.681-1.14
No							1.00	--
Anxiety Disorder (12-month)								
Yes							.691**	.525-.909
No							1.00	--
Bipolar Disorder (12-month)								
Yes							.825[a]	.532-1.28
No							1.00	--
Substance Use Disorder (12-month)								
Yes							.789[a]	.535-1.16
No							1.00	--

* $p < .05$, ** $p < .01$, *** $p < .001$, [a] not significant

degrees of freedom (*df*) = 42 for all calculations

As with help-seeking intent, there was a significant inverse relationship between

ACE exposure and endorsing feeling comfortable talking to a professional about personal

problems in all four logistic regression models. In Model One, analyzing only the

relationship with ACE score, showed respondents with two ACE had a 24% decrease in

the odds of feeling comfortable with self-disclosure to a professional compared to those

with zero ACE (OR = .764, CI = .587-.993). That drop was 41% for respondents with

three ACE (OR = .590, CI = .406-.856) and 32% for respondents with four or more ACE

(OR = .681, CI = .527-.879). When predisposing factors were introduced in Model Two,

the relationship between ACE score and self-disclosure for respondents with two or more

ACE was no longer significant. However, respondents with three ACE had a 39%

decrease in odds of feeling comfortable with self-disclosure compared to those with zero

ACE (OR = .608, CI = .431-.860), and respondents with four or more ACE had a 23%

decrease in odds of feeling comfortable talking to a professional (OR = .772, CI = .558-

.934). Model Three introduced enabling/impeding factors and again showed a significant

inverse relationship between ACE and comfort with self-disclosure starting at two or

more ACE. Compared to respondents with zero ACE, the decrease in odds of endorsing

feeling comfortable talking to a professional was 32% (OR = .684, CI = .497-.940), 44%

(OR = .560, CI = .349-.897) and 31% (OR = .689, CI = .528-.899) for two, three and four

or more ACE, respectively. Finally, Model Four adjusted for psychiatric need factors and

the trend of a significant inverse relationship starting at two or more ACE continued.

Compared with respondents with zero ACE, respondents with two ACE had a 30%

decrease in odds of feeling comfortable with self-disclosure (OR = .704, CI = .506-.979),

those with three ACE had a 43% drop (OR = .573, CI = .352-.935) and those with four or

more ACE had a 25% decrease in odds (OR = .747, CI = .574-.973). Consistently,

increased ACE exposure was associated with decreased odds of feeling comfortable

talking to a professional about personal problems. This was consistent with the results

from the crosstabulations analysis, where ACE score was significantly associated with

self-disclosure (X^2 (3.34) = 31.8, p = .007).

In Model Two, which introduced predisposing factors, both marital status and

education level were significantly associated with endorsing feeling comfortable talking

to a professional about personal problems. Respondents who were never married had a

41% decrease in the odds of endorsing feeling comfortable self-disclosing to a

professional compared to respondents who were either divorced, separated or widowed

(OR = .592, CI = .405-.865). However, that significant relationship went away after

controlling for enabling and psychiatric need factors in models three and four. There was

no significant difference in terms of association with self-disclosure between respondents

who were currently married, or cohabitating compared to ones who were either divorced,

separated, or widowed in any of the LR models.

Educational level, on the other hand, was significantly associated with self-

disclosure in all models. Compared to respondents with a college degree or higher,

respondents with a high school degree had a 43% decrease in the odds of reporting

feeling comfortable talking to a professional (OR = .572, CI = .472-.768). Respondents

with less than a high school education were 49% less likely than college graduates to

report feeling comfortable talking to a professional (OR = .507, CI = .373-.689). In

Model Three, which controlled for enabling factors, respondents with a high school

diploma were 39% less likely than college graduates to report feeling comfortable talking

to a professional (OR = .611, CI = .443-.842); and those with less than a high school

diploma had a 34% decrease in odds (OR = .659, CI = .488-.891). Finally, in Model Four,

compared to college graduates, high school graduates had a 39% decrease in odds (OR =

.614, CI = .445-.848), and respondents who did not graduate from high school had a 31%

decrease in odds of having a positive attitude toward self-disclosure (OR = .689, CI =

.494-.905). In the crosstabulations analysis, lower education levels also showed a

significant inverse relationship with endorsing feeling comfortable with talking to a

professional about personal problems (X^2 (2.35) = 62.46, p < .001).

Gender was the other predisposing factor to show a significant relationship with

self-disclosure. However, the relationship between gender and endorsing feeling

comfortable talking to a professional about personal problems was not significant in

Model Two, which only adjusted for predisposing factors (OR = .876, CI = .683-1.12).

Once enabling factors were introduced in Model Three, the inverse relationship between

being male and self-disclosure became significant (OR = .775, CI .619-.971): males were

22% less likely than females to endorse feeling comfortable talking to a professional. In

Model Three, males had a 24% decrease in odds of feeling comfortable with self-

disclosure to a professional compared with females (OR = .760, CI = .599-.963). Gender

was not significantly associated with self-disclosure in the crosstabulations analysis (X^2

(1) = 4.87, p = .229). Race and age were not significantly associated with self-disclosure

in either logistic regression or in the crosstabulations analysis.

Model Three controlled for enabling/impeding factors. Here enabling/impeding

factors associated with self-disclosure had some differences from those associated with

help-seeking intent. For example, respondents who were financially secure (as measured

by answering "yes" to the question, "Do you have enough money to your needs?" were

more likely to report feeling comfortable with talking to a professional compared to

respondents who endorsed financial insecurity in both Models Three (OR = 1.59, CI =

1.23-2.06), and Four (OR = 1.54, CI = 1.19-2.00). This is consistent with the

crosstabulation analysis, where financial security had a significant association with self-

disclosure (X^2 (1) = 33.59, $p < .001$). As with help-seeking intent, health insurance status

was significantly associated with self-disclosure in the crosstabulation analysis but not in

LR in the context of ACE score.

As with intent, both previous experiences with mental health counseling and

being prescribed medication for emotional or substance abuse problems continued to be

significant predictors of feeling comfortable talking to a professional. A lifetime history

of receiving counseling services for 30 minutes or more doubled the odds of feeling

comfortable self-disclosing to a professional compared to individuals with no such

history, in both Model Three (OR = 1.93, CI = 1.51-2.46), and in Model Four after

adjusting for psychiatric need (OR = 2.03, CI = 1.57-2.62). Lifetime history of being

prescribed medication for mental health reasons also increased the likelihood of reporting

being comfortable talking to a professional compared to individuals with no such

experience in both Model Three (OR = 1.29, CI = 1.02-1.62) and Model Four (OR =

1.37, CI = 1.09-1.73). In crosstabulation analysis, a history of receiving counseling was a

significant predictor of help seeking (OR = 1.81, CI = 1.43 – 2.30), as was a history of

being prescribed psychiatric medication (OR = 1.48, CI = 1.25-1.75). However, within

the context of ACE exposure, the association between receiving counseling and having a

positive attitude toward self-disclosure became more robust and the association with

receiving psychiatric medication was decreased in effect.

As with intent, a lifetime history of suicidality had an inverse relationship with

level of comfort with self-disclosure to a professional, but only in Model Three before

adjusting for psychiatric need factors. Respondents with a history of suicidal behavior

had a 23% decrease in odds of reporting feeling comfortable talking to a professional

about personal problems compared to respondents with no history of suicidality (OR =

.772, CI = .634-.940). However, suicidality was no longer associated with self-disclosure

after adjusting for psychiatric need factors in Model Four. It should be noted, however,

the inverse association between suicidality and self-disclosure was not significant when

only considering the direct relationship between the two variables in the crosstabulations

analysis (OR = .908, CI = .747-1.11).

Model Four controlled for psychiatric need factors defined as meeting diagnostic

criteria for depression, anxiety, bipolar or substance use disorder in the previous 12-

month period. As with intent, respondents who met clinically significant diagnostic

criteria for an anxiety disorder in the previous 12-months had a 31% decrease in odds of

having a positive attitude toward self-disclosure to a professional compared to

respondents with no anxiety disorder (OR = .691, CI = .525-.909). In the crosstabulations

analysis, there was no significant association between anxiety and feeling comfortable

talking to a professional about personal problems (OR = .850, CI = .676-1.07). However,

the crosstabulations analysis did show a significant inverse association between substance

use disorder and self-disclosure (OR = .633, CI = .476-.842). Nevertheless, in the logistic

regression, in the context of ACE exposure only anxiety had a significant association and

substance use disorders no longer had a significant association. Also, as with the

crosstabulations analysis, neither depressive disorder nor bipolar disorder had a

significant association with endorsing feeling comfortable talking to a professional source

of help.

Table 20. Result of logistic regression (LR) modeling with four progressively adjusted logistic models for feeling embarrassed over getting professional help (social stigma)

Variables	Model 1 OR	Model 1 CI	Model 2 OR	Model 2 CI	Model 3 OR	Model 3 CI	Model 4 OR	Model 4 CI
ACE Score								
0	1.00	--	1.00	--	1.00	--	1.00	--
1	.899[a]	.746-1.00	.899[a]	.752-1.07	.858[a]	.678-1.09	.845[a]	.669-1.02
2	.802[a]	.649-.991	.829[a]	.664-1.03	.922[a]	.713-1.19	.900[a]	.697-1.16
3	.780[a]	.622-.980	.785[a]	.623-.990	.814[a]	.632-1.05	.792[a]	.612-1.02
4+	.890[a]	.618-1.14	.941[a]	.731-1.21	.969[a]	.713-1.32	.914[a]	.620-1.25
Predisposing Factors								
Gender								
Female			1.00	--	1.00	--	1.00	--
Male			1.29***	1.14-1.47	1.36***	1.17-1.59	1.38***	1.18-1.61
Age								
18-25			1.20[a]	.855-1.69	1.30[a]	.863-1.97	1.24[a]	.819-1.67
26-44			1.80***	1.44-2.25	1.78**	1.34-2.38	.841[a]	.501-1.41
45-55			1.39***	1.04-1.84	1.41**	1.02-1.94	.868[a]	.528-1.43
56-64			1.00	--	1.00	--	1.00	--
65+			1.27[a]	.921-1.74	1.21[a]	.799-1.82	.810[a]	.499-1.32
Race								
White non-Hispanic			1.00	--	1.00	--	1.00	--
Asian			1.05[a]	.674-1.65	.850[a]	.501-1.45	.858[a]	.806-1.46
Hispanic/Latino			.789[a]	.554-1.12	.843[a]	.570-1.25	.847[a]	.574-1.25
African American			.783[a]	.604-1.02	.766[a]	.572-1.03	.783[a]	.584-1.05
Other			.899[a]	.583-1.39	1.10[a]	.676-1.78	1.08[a]	.672-1.73
Education								
College graduate			1.00	--	1.00	--	1.00	--
Some college			.887[a]	.686-1.15	.882[a]	.695-1.15	.879[a]	.670-1.15
High school graduate			.813[a]	.656-1.01	.784[a]	.600-1.03	.782[a]	.598-1.02
Not a high school graduate			.883[a]	.678-1.15	.830[a]	.695-1.10	.826[a]	.624-1.09
Married								
Previously			1.00	--	1.00	--	1.00	--
Currently			1.38**	1.12-1.71	1.33*	1.03-1.70	1.35*	1.05-1.73
Never			1.51**	1.16-1.96	1.50*	1.13-1.98	1.49*	1.12-1.96
Enabling Factors								
Health Insurance								
Yes					1.06[a]	.770-1.45	1.06[a]	.778-1.45
No					1.00	--	1.00	--
Financial Insecurity								
Yes					1.04[a]	.835-1.30	1.06[a]	.489-1.33
No					1.00	--	1.00	--

Table 20, continued

Variables	Model 1		Model 2		Model 3		Model 4	
	OR	CI	OR	CI	OR	CI	OR	CI
Past Mental Health Treatment								
Counseling								
Yes					.792*	.658-.952	.768**	.639-.923
No					1.00	--	1.00	--
Medication								
Yes					.955[a]	.775-1.18	.919[a]	.743-1.14
No					1.00	--	1.00	--
Inpatient Stay								
Yes					.883[a]	.552-1.26	.813[a]	.543-1.22
No					1.00	--	1.00	--
Past Suicidal Behavior								
Yes					1.03[a]	.799-1.31	.977[a]	.768-1.24
No					1.00	--	1.00	--
Psychiatric Need Factors								
Depressive Disorder (12-month)								
Yes							1.11[a]	.832-1.47
No							1.00	--
Anxiety Disorder (12-month)								
Yes							1.32*	1.05-1.67
No							1.00	--
Bipolar Disorder (12-month)								
Yes							.731[a]	.499-1.07
No							1.00	--
Substance Use Disorder (12-month)								
Yes							1.40*	1.06-1.86
No							1.00	--

* $p < .05$, ** $p < .01$, *** $p < .001$, [a] not significant

degrees of freedom (*df*) = 42 for all calculations

       Unlike help-seeking intentions and self-disclosure, there was no significant

relationship found between ACE score and perceived stigma. None of the four models

predicted a significant likelihood of respondents feeling embarrassed if friends knew they

were getting help as related to ACE score (Table 20). This is consistent with

crosstabulations analysis, which showed no significant association between ACE score

and perceived social stigma (X^2 (3.59) = 9.84, p = .170). However, other factors did show

a significant association with this help-seeking dimension in the context of ACE

exposure.

The predisposing factors associated with social stigma in Model Two were

gender, age, and marital status. Males had a 29% increase in odds of reporting feeling

embarrassed over getting professional help compared to females (OR = 1.29, CI = 1.14-

1.47). In Model Three, the odds of males experiencing perceived social stigma was 36%

greater than females (OR = 1.36, CI = 1.17-1.59). Finally, in Model Four, males were

38% more likely to report feeling embarrassed compared to females (OR = 1.38, CI =

1.19-1.61). The association between gender and perceived social stigma was also

significant in the crosstabulations analysis (X^2 (1) = 29.55, p < .001). Age was also

significantly associated with perceived social stigma in the crosstabulations analysis (X^2

(2.97) = 55.04, p < .001). That association continued in the second logistic regression

model. Respondents 26-44 years of age had an 80% increase in odds of feeling

embarrassed over getting professional help compared to respondents in the 56-64 age

group (OR = 1.80, CI = 1.44-2.25). 45-55-year-old respondents were 39% more likely to

report feeling embarrassed (OR = 1.39, CI = 1.04-1.84). This trend continued in Model

Three, respondents in the 26-44 age category had a 78% increase in the odds of feeling

embarrassed compared to 55-64 age group (OR = 1.78, CI = 1.34-2.38); and 45-55 age

group had a 41% increase in the odds of reporting feeling embarrassed over getting

professional help (OR = 1.41, CI = 1.02-1.94). In Model Four, 26-44-year-olds were 74%

more likely (OR = 1.74, CI = 1.31-2.31), and 45-55-year-old respondents were 39% more

likely to endorse feeling embarrassed if their friends knew they were getting professional

help (OR = 1.39, CI = 1.01-1.91). Note there was no significant difference between 18-25

year-old group or the 65 and above age group compared to 55-64 year-old group in any

of the LR models.

Marital status is the third predisposing factor associated with perceived social

stigma. In the other two help-seeking dimensions, marital status was only partially

significant: 1) With intent only when controlling for predisposing factors; and 2) With

self-disclosure only when controlling for predisposing and enabling factors. Marital

status had a significant association with endorsing feeling embarrassed over getting

professional help when controlling for predisposing, enabling and need factors.

Participants who were never married had a 51% increase in odds of experiencing

perceived social stigma compared to participants who were either divorced, separated, or

widowed (OR = 1.51, CI = 1.16-1.96). Currently married respondents were 38% more

likely to experience embarrassment over getting professional help compared with those

who were previously married (OR = 1.38, CI = 1.12-1.71). After controlling for enabling

factors in Model Three, compared to previously married respondents, those who were

never married had a 50% increase in odds of endorsing feeling embarrassed

(OR = 1.50, CI = 1.13-1.98). Participants who were currently married had a 33% increase

in odds of reporting perceived social stigma compared to those who were previously

married (OR = 1.33, CI = 1.03-1.70). Finally, the trend in odds ratio for marital status

remained consistent after controlling for psychiatric need factors in Model Four: Never

married respondents were 49% more likely (OR = 1.49, CI = 1.12-1.96), and those

currently married were 35% more likely (OR = 1.35, CI = 1.05-1.73). Of note, marital

status was also significantly associated with perceived social stigma in the

crosstabulations analysis (X^2 (1.92) = 38.24, $p < .001$). Educational level was associated

with perceived social stigma in crosstabulation (X^2 (2.86) = 21.08, $p = .019$) but not in

any of the logistic regression models.

Only one enabling/impeding factor was significantly associated with this stigma

dimension of help-seeking in Model Three: previous counseling experience. Past receipt

of counseling for 30-minutes or more was associated with 21% decreased odds of

experiencing social stigma over getting professional help (OR = .792, CI = .658-.952)

compared to participants with no past treatment. In Model Four, respondents with a

history of counseling were 23% less likely to endorse feeling embarrassed (OR = .768, CI

= .639-.923). In the crosstabulation analysis, both a history of counseling and a history of

being prescribed psychiatric medications were significantly associated with perceived

social stigma. However, in the context of ACE exposure, being prescribed psychiatric

medications was not significantly associated with social stigma. Past suicidal behavior,

though a significant impeding factor for both help-seeking intent and comfort with self-

disclosure, had no significant relationship with the social stigma dimension of help-

seeking.

No psychiatric need factors were associated with endorsing feeling embarrassed

over getting professional help in the crosstabulation analysis. However, two need

factors—anxiety disorder and substance use disorder—were significantly associated with

perceived social stigma. Respondents with a clinically significant anxiety disorder in the

past 12 months were 32% more likely to report feeling embarrassed compared to

respondents with no anxiety disorder (OR = 1.32, CI = 1.05-1.67). Respondents with

alcohol/drug use or abuse in the past 12 months were 40% more likely to endorse feeling

embarrassed if their friends knew they were getting professional help for their emotional

problems (OR = 1.40, CI = 1.06-1.86). The other two need factors—depressive disorder

and bipolar disorder—had no significant association with the stigma dimension of

professional help-seeking either in the crosstabulations or logistic regression analysis.

Data Analysis by Research Question

The data analysis by research question and hypothesis provides the analysis of

results.

Research Question 1 and Hypothesis

Research Question 1: Is there is a significant relationship between exposure to

childhood adversity (as measured by ACE score) and help-seeking intentions (as

measured by probability of seeking professional treatment for a serious emotional

problem)?

H1 was supported: There is a statistically significant inverse relationship between

exposure to childhood adversity and help-seeking intentions.

Findings from both Chi-Square Test of Independence and Binary Logistic

Regression rejected the null hypothesis and found a statistically significant inverse

relationship between exposure to childhood adversity (as measured by ACE score) and

help-seeking intentions (as measured by probability of seeking professional treatment for

a serious emotional problem. The relationship between ACE score and the probability of

seeking professional help for emotional problems was statistically significant ($X^2(2.59) =$

32.7, $p = .033$). Respondents with zero ACEs were almost one and a half times more

likely than respondents with four or more ACEs to report intent to seek professional help

(OR = 1.48, CI = 1.02–2.14).

Research Question 2 and Hypothesis

Research Question 2: Is there a significant relationship between exposure to

childhood adversity (as measured by ACE score) and level of comfort with self-

disclosure to a professional (as measured by level of comfort with talking about personal

problems to a professional)?

H2 was supported: There is a statistically significant inverse relationship

between exposure to childhood adversity and level of comfort with self-disclosure

to a professional.

Findings from both Chi-Square Test of Independence and Binary Logistic

Regression rejected the null hypothesis and found a statistically significant inverse

relationship between exposure to childhood adversity (as measured by ACE score) and

level of comfort with self-disclosure to a professional (as measured by endorsing feeling

comfortable with talking about personal problems with a professional). The relationship

between ACE score and endorsing feeling comfortable talking with a professional about

personal problems was statistically significant ($X^2(3.34) = 31.8$, $p = .007$). Respondents

with zero ACEs were more likely than respondents with four or more ACEs to report

feeling comfortable with talking to a professional about personal problems (OR = 1.33,

CI = 1.03–1.72).

Research Question 3 and Hypothesis

Research Question 3: Is there a significant relationship between exposure to childhood adversity (as measured by ACE score) and level of perceived social stigma from getting professional help for emotional problems (as measured by level of embarrassment felt if friends knew the respondent was getting professional help)?

H_0: There is no statistically significant relationship between exposure to childhood adversity and level of perceived social stigma from getting professional help.

Both the Chi-Square Test of Independence and Binary Logistic Regression failed to reject the null hypothesis. There was no statistically significant relationship between ACE score and endorsing feeling embarrassed over getting professional help ($X^2(3.59) = 9.84$, $p = .170$). A respondent with four or more ACEs was no more likely than a respondent with zero ACEs to endorse feeling embarrassed if friends knew they were getting help compared with respondents with zero ACEs (OR = .890, CI = .698–1.36).

Chapter 5: Discussion and Summary

Though the relationship between exposure to childhood adversity (CA) and adult

psychopathology has been widely studied (Danese et al., 2009; Hammen et al., 2000;

Heim et al., 2008; Kim et al., 2013; Korkeila et al., 2005; Lara et al., 2000; Nanni et al.,

2012), limited research exists on how CA exposure affects help-seeking for personal and

emotional problems (Leitenberg et al., 2004; Sabina et al., 2012a; Stige et al., 2013;

Willis et al., 2014). The present study addressed this gap in the literature by providing

empirical data on the association between cumulative exposure to childhood adversity

and attitudes toward seeking professional help. The results of this study provide increased

understanding of the impact of exposure to childhood adversity on mental health help-

seeking intentions. The current findings provide useful information to improve access to

behavioral health treatment, as well as practices and policies that better address the needs

of the large population of adults who have been exposed to cumulative CA. This chapter

provides the discussion of the results of the study, recommendations for social work

practice and further research, and study limitations.

This study provides strong evidence that adults with a history of high ACE

exposure are particularly vulnerable to developing psychiatric disorders and are at risk for

suicidal behaviors. The study also provided new empirical evidence that these vulnerable

adults are more likely to avoid professional help and treatment. The study also found an

interaction effect between cumulative ACE exposure, history of suicidal behavior and

anxiety symptoms, which may further compound help-avoidance. Social workers should

be aware individuals with high ACE exposure are more likely to avoid seeking

professional treatment, even when experiencing symptoms of acute emotional distress such as suicidal ideation.

People who are suicidal are more likely to avoid help from all sources (Johnson et al., 2002; Wilson & Deane, 2010; Yakunina et al., 2010). Individuals who are thinking of or planning to commit suicide are more likely to endorse wanting to seek help from "no one" rather than a friend, family member, or a professional (Deane et al., 2001; Rickwood et al., 2005). Given the high social costs of suicide and the recent increase in suicide rates (Center for Disease Control (CDC), 2018a), there are substantial real-life consequences associated with understanding risk factors associated with help-negation— in particular when assessing risk factors for suicide. It is important to know that together, exposure to childhood trauma, anxiety, and past suicidal behavior acts as a barrier to seeking help. In fact, findings from the present study suggest that many individuals in need of psychological help may fail to seek help or be unwilling to self-disclose to a mental health professional.

This help-negation effect is associated with cumulative exposure to CA. The increased risk CA poses for suicidality is especially troubling. Suicidal individuals with childhood trauma histories may be even less likely to seek help from mental health professionals, and therefore less likely to access needed treatment. Suicide is a leading cause of death in the US according to the CDC (2018). Suicide rates have increased by 30% since 1999—when the data for the present study was collected (Center for Disease Control (CDC), 2018a). Moreover, many individuals who commit suicide don't have a mental health diagnosis. The present study presents evidence of additional risk factors associated with suicidal behavior—namely cumulative exposure to childhood adversity

and the presence of an anxiety disorder. In other words, the present study shows a synergistic, help-negation effect between increased ACE exposure, suicidality and anxiety. Clinical and generalist social work practitioners should consider the role exposure to CA may deter professional help-seeking and lead to transference in psychotherapy. Social workers should consider their clients' potential ACE exposure—factors such as separation from parents, risky family environments, and maltreatment—and how it may impede the person from getting the professional help and emotional support they need.

Moreover, even when they access professional help, adults with exposure to childhood adversity may be less likely to talk about their feelings and volunteer they are experiencing distressing symptoms. Findings from the current study show adults who experienced two or more adverse childhood experiences do not feel comfortable talking to a professional about their personal problems. This is consistent with the literature indicating adults who have experienced childhood trauma use emergency department and primary care services more often than specialty behavioral health services—and are more likely to present with somatic rather than psychological complaints (Fleury et al., 2014). The current study also shows anxiety symptoms or meeting diagnostic criteria for an anxiety disorder in the past 12 months decrease the likelihood a person would feel comfortable talking to a professional about personal problems. Study findings also indicate a history of suicidal ideation may decrease the likelihood of self-disclosure to a professional. This indicates even when they seek professional help, adults with ACE exposure, anxiety and past suicidal behavior may be reticent to share personal

information, may not self-disclose psychiatric symptoms (including suicidal ideation, plan or intent), and may present ambivalent about getting treatment.

The literature on the role of stigma on help-seeking intentions is mixed. Some studies show anticipated public stigma has a small to medium effect on intentions to seek professional help, other studies show stigma is not as important as wanting to solve problems on their own or thinking problems would go away as a reason for not seeking help (H.-L. Cheng et al., 2015; Clement et al., 2015; Reynders et al., 2013). The current study showed no significant association between exposure to childhood adversity and anticipated stigma over getting professional help. ACE exposure had no impact on an individual endorsing they would feel embarrassed if their friends knew they were getting help from a professional for personal problems. A possible explanation is that cumulative exposure to childhood adversity may expose the person to repeated shameful experiences, such that anticipated social stigma does not have a significant influence on their decisions about seeking help or treatment. The current study did find people who met diagnostic criteria for a substance use or anxiety disorder in the past 12 months may feel anticipated social stigma over getting help from a professional. These individuals may be more likely to avoid help because of stigma-related concerns.

Aside from finding compelling evidence that exposure to cumulative childhood adversity decreases intention to seek help and willingness to self-disclose to a professional, another important finding from the current study is the role of gender on attitudes toward professional help-seeking. Men may be at high risk for help-negation, and therefore may need more targeted outreach efforts. In the current study, males were less likely to seek professional help, less likely to feel comfortable with self-disclosure to

a professional, and more likely to feel embarrassed over getting help for personal

problems. This is consistent with existing literature—cisgender men are consistently less

likely to be willing to seek help, and less likely to utilize behavioral health services

compared to cisgender women (Hammer, Vogel, & Heimerdinger-Edwards, 2013;

Rickwood, Deane, Wilson, & Ciarrochi, 2005; Vogel, Heimerdinger-Edwards, Hammer,

& Hubbard, 2011). Given that males are at higher risk for completed suicide (Afifi et al.,

2008; Borges, Angst, Nock, Ruscio, & Kessler, 2008; Center for Disease Control (CDC),

2018a), it is important to understand how barriers to help-seeking may affect men.

Findings from the present study suggest men who need behavioral health treatment may

fail to seek help, may be less willing to self-disclose to a mental health professional, and

may be more likely to feel stigma over getting professional help.

Cisgender men may face unique barriers to accessing help, as masculine social norms

limit men's capacity for showing vulnerability, and may encourage isolation and

dissociation from distressing symptoms and memories (Brown, Bennett, Li, & Bellack,

2011; Holzinger, Floris, Schomerus, Carta, & Angermeyer, 2012; Willis et al., 2014).

Males are more likely to cope with distressing emotions through substance abuse and

social withdrawal (Möller-Leimkühler, 2002; Willis et al., 2014). The present study

supports the existing literature—men were more likely than women to avoid help, self-

disclosure, and to experience stigma over getting professional help. Some implications

for social work practice and policy development include tailoring gender-specific

interventions and universal screening for ACE exposure to identify males with

cumulative ACE, with increased risk for behavioral health disorders and suicidal

behaviors. CSWE should consider incorporating gender-specific practice standards for

education. Social work practice education should problem-solve around engaging males

with high ACE exposure in clinical and social interventions. Next, implications for

practice and future research are detailed.

Implications for Practice, Prevention and Policy

In terms of clinical practice with individuals with history of exposure to childhood

trauma, neglect and other adversities, this study has several important implications. First,

social workers need to be informed that exposure to cumulative CA may serve as a

barrier to help-seeking. Second, clinicians and the public should be informed that

exposure to cumulative ACE may be an additional risk factor for suicidality, anxiety and

help-negation. The link between cumulative ACE exposure, anxiety and suicidal risk

behavior is an important prevention target for the rising suicide rates. Trauma-informed

care should be an essential part of social work education and ongoing professional

development. Social workers should recognize that seeking help itself can be traumagenic

for clients for whom asking for help in childhood was futile or dangerous. In addition, the

stigmatizing nature of social services can reinforce shame and lack of self-efficacy.

Trauma-informed relational and interpersonal strategies engage clients in a corrective

experience by providing healing through helping relationships that feel emotionally safe

and respectful (Levenson, 2017). Finally, staff in social service and general medical

settings should be aware individuals with child abuse/neglect histories are more likely to

present with psychogenic complaints and somatic symptoms, and that these are often

related to post-trauma syndromes (Afifi et al., 2008; Atkinson et al., 2015; Walker et al.,

1999).

The disparity in intent to seek professional help between males and females indicates a need to consider gender-relevant services as a primary consideration in targeted outreach programs and evidence-based interventions. Males have double the odds of committing suicide than females (Center for Disease Control (CDC), 2018a, 2018b). Interventions geared to address stigma associated with male social norms may increase treatment use rates among this vulnerable population. Aside from targeting interventions to males to normalize and increase professional help-seeking behavior, outreach programs can be conducted with the aim of educating clinicians in medical and behavioral health settings on the negative association between ACE exposure and help-seeking. Given this association, it may be especially important for social workers and medical staff to be informed on the relationship between cumulative ACE exposure, anxiety and risk for suicide. General medical settings such as primary care and emergency departments may be ideal opportunities for universal screening on ACE exposure using validated tools such as the CDC ACE study questionnaire. Medical personnel in these settings should receive special training on increased risk for suicide, mental health symptoms, and addiction associated with history of childhood trauma. Better screening may increase the rate at which adults are identified and referred to professional counseling, thereby minimizing the impact of help-negation. This type of generalized screening would also help better define the person's risk status, while also considering the person's current risk state compared to their baseline, available protective resources, and anticipating any foreseeable changes that may exacerbate suicide risk (Pisani, Murrie, & Silverman, 2016).Helping professionals should receive training about the role of high ACE exposure in impeding self-disclosure and help-seeking.

Incorporating skills development education on coping styles (engagement versus

disengagement/avoidant coping), the role of anxiety and how to apply basic tenets of

help-seeking can improve access to professional treatment.

High ACE exposure in treatment-seeking populations may manifest as ambivalence

about treatment, therapy-interfering behaviors such as missing appointments, and

premature termination of treatment. Social workers should consider that for individuals

with high ACE exposure, the legacy of trauma may appear to be resistance, and they may

need more focus on client-centered relationship-building as part of early engagement

(Levenson, 2017). Social workers should also consider educating clients on the help-

negation effect associated with trauma, suicidal risk behavior and anxiety.

Reducing trauma-related barriers to help-seeking may be facilitated by exploring

clients' fears regarding self-disclosure and being stigmatized by others, as well as self-

stigmatizing beliefs surrounding seeking help. Educating clients and addressing such

stigma concerns and clients' ambivalence regarding seeking help may reduce premature

therapy termination. As an additional protective factor, individuals with cumulative ACE

exposure who are already receiving professional services may also be encouraged to seek

help and emotional support from significant others. It may be important to identify the

client's existing social support networks and to encourage the client to seek support from

such informal sources as well. In addition, for clients whose social support networks are

limited, a critical social work intervention may involve strategies aimed at increasing

interpersonal support. Furthermore, social work practitioners may engage in outreach in

the community with the aim of promoting help-seeking behaviors and increasing literacy

about mental health and mental health treatment. Such interventions may reduce barriers

to help-seeking and thus minimize the effect of help-negation, particularly for individuals with high ACE exposure.

A primary prevention consideration for trauma-informed social work practice is increasing access and opportunity for behavioral health counseling interventions targeting children and adolescents as a universal precaution for help-negation. The present study found enabling factors associated with help-seeking intent included a positive experience of receiving professional mental health treatment, including counseling and psychiatric medication and having health insurance. Interventions such as Mental Health First Aid (Jorm, Korten, & Jacomb, 2000), and other behavioral counseling-based interventions have focused on increasing mental health literacy and providing supportive therapy (Klimes-Dougan, Wright, & Klingbeil, 2016; Pisani et al., 2016). Trauma-informed social workers practicing with clients of any age, but especially children and adolescents, should consider the power of the therapeutic alliance as a potential inoculation against help-negation for suicide and other acute emotional problems in the future. In other words, even one positive 30-minute counseling session may ameliorate the help-negation effect associated with cumulative exposure to childhood adversity. In addition, social workers working in general medical settings should advocate for awareness of childhood trauma and its impact of health risks, treatment needs, and course of care. In addition, social workers in all settings should consider the needs of trauma survivors in health development and recovery to optimize their interventions.

Implications for Future Research

The findings of the present study also suggest several directions for further research. Results lend support to the idea that exposure to cumulative adversity may

indeed function as a barrier to help-seeking and access to treatment. Although this study identifies some factors that contributed to this professional help-negation effect (anxiety, past suicidal risk behaviors, avoidance of self-disclosure), much more remains to be understood. There is still limited knowledge of the factors accounting for the connection between high ACE exposure and intentions to seek professional help. Future research should focus on the role of anxiety in both cumulative ACE exposure and attitudes toward seeking professional help. Though extensive research supports the link between suicidality and anxiety, more research is needed to define the interaction effect when combined with cumulative ACE exposure. Additional research should consider how different types of childhood adversity may interact with three help-seeking dimensions. This data set has extensive information on patterns of health service use, additional measures of attitudes toward professional help-seeking, and lifetime incidence of mental health disorders. These variables provide avenues for future study to increase the knowledge base on the impact of cumulative ACE exposure on attitudes toward professional help-seeking and their relationship with mental health service use.

Because trauma-informed practices, by definition, must be flexible enough to respond to client interpersonal dynamics as they present, it is difficult to study the efficacy of trauma-informed care in experimental designs which require rigidity for replication. Future research should focus on understanding the role of trauma-informed care in improving client outcomes, reducing help-negation, and enhancing client engagement. As well, because social factors (e.g. poverty, community violence, discrimination) are traumagenic and contribute to trauma symptoms as well as help-negation, community-

based interventions should be devised and evaluated to increase individual and

community well-being.

Limitations

Although the present study contributes to the current literature on childhood

adversity exposure and adults' attitudes toward help-seeking, it also has several

limitations. First, data for the study was collected in 2001-2003, and is representative of

the US national population in the 2000 census. The rates of treatment utilization, mental

illness and exposure to childhood adversity may not reflect changes in the current

population over the past 18 years. In addition, any population-level changes in rates of

mental illness or exposure to childhood adversity since the year 2000 are not reflected in

this study, and cultural, political and economic trends are unaccounted for. Another

limitation was the self-report nature of the NCS-R: responses to the questions posed in

the NCS-R regarding ACE exposure and attitudes toward professional help-seeking are

self-reported and may be confounded by social desirability bias. Research suggests that

people tend to under-report ACEs. In addition, the study was also not able to determine

cause-and-effect relationships because of the NCS-R's cross-sectional design. Other

limitations, considering the interaction effect of anxiety on help-seeking and ACE

exposure, is that this study combined all 12-month incidence of any anxiety disorder into

one variable. However, considering the correlation between ACE exposure and PTSD

diagnosis, the present study may have benefited from measuring PTSD as an independent

moderator, without combining it with other anxiety disorders.

Another limitation of this study is the use of a cross-sectional design. Given the

correlational nature of the reported findings, cause and effect relationships among the

variables of interest cannot be ascertained. For example, although this study found that

respondents with cumulative ACE exposure endorsed lower intentions to seek help, a

causal relationship between these factors is not demonstrated. A further extension of this

research will require the use of a longitudinal design that could delineate the temporal

changes and causal relationship among the variables of interest. Finally, participants in

this study self-reported their help-seeking intentions in the event of experiencing serious

emotional problems in a future situation. The relationship between reported intentions to

seek help and actual help-seeking behavior is unclear, which limits the external validity

of these findings.

Conclusion

Findings from this study indicate adults who have experienced cumulative childhood

adversity are more likely to avoid seeking professional help and are more likely to feel

uncomfortable sharing personal information with a professional. This is important

information for social workers who seek to practice from a trauma-informed framework.

From a life course perspective, social workers must also consider every intervention has a

potential to shape the client's health trajectory. Findings from this study indicate

experience with both counseling for 30 minutes or more and being prescribed psychiatric

medication increases willingness to seek help for severe emotional problems. Our

interactions with clients—even ones who exhibit ambivalence, attend treatment

inconsistently, and/or have difficulty with self-disclosure—can spark a trajectory of

improved emotional and biosocial wellness. Social work practice and policy should

promote psychoeducation on the long-term effects of ACE exposure, the help-seeking

process, and the benefits of participating in psychotherapy. Both adverse and therapeutic

experiences can cause epigenetic changes. Exposure to cumulative childhood adversity is associated with increased risk of suicide, psychopathology, and help-negation. Conversely, getting professional counseling and psychotherapy can promote self-healing from trauma. Those of us who work with vulnerable populations should consider both ACE history, and the potential beneficial effect of each interaction we have with a client.

This study presented new evidence on the relationship between exposure to cumulative childhood adversity, help-negation and avoidance of self-disclosure. This study extends the generalizability of the prior literature on childhood trauma adversity and adult help-seeking (Elhai & Simons, 2007; Levenson et al., 2017; Sabina et al., 2012a; Stige et al., 2013; Willis et al., 2014), by using a U.S. nationally representative sample. However, factors accounting for the association between high ACE exposure and help-negation for professional sources are not fully understood. More research to fully understand the relationship between ACE exposure and professional help-seeking may reduce barriers to treatment and promote future help-seeking behavior.

Clinical pearls: Effective biopsychosocial assessments should include history of exposure to childhood adversity and consider the implications of that exposure to the therapeutic relationship. Individuals at highest risk of avoiding help are males, those with high exposure to childhood adversity, current or recent anxiety, and history of suicide risk behaviors.

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Appendices

Appendix A: CDC ACE Questionnaire

The following questions ask about your experiences during your first 18 years of life:

1. Did a parent or other adult in the household often or very often…
 Swear at you, insult you, put you down, or humiliate you?

	Yes (1)	No (0)

2. Did a parent or other adult in the household often or very often…
 Push, grab, slap, or throw something at you?

Yes (1)   No (0)

3. Did an adult or person at least 5 years older than you ever…
 Touch or fondle you or have you touch their body in a sexual way?

Yes (1) No (0)

4. Did you often or very often feel that …
 No one in your family loved you or thought you were important or special?

Yes (1) No (0)

5. Did you often or very often feel that …
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

Yes (1)   No (0)

6. Were your parents separated or divorced or unmarried to each other?

Yes (1)No (0)

7. Was your mother or stepmother:
Often or very often pushed, grabbed, slapped, or had something thrown at her?

Yes (1) No (0)

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Yes (1)No (0)

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?

Yes (1)No (0)

10. Did a household member go to jail or prison?

Yes (1)No (0)

Appendix B: Barry University Institutional Review Board Approval Letter

Research with Human Subjects
Protocol Review

Date: March 1, 2018

Protocol Number: 1182754-1

Title: The Relationship between Childhood Adversity and Attitudes Toward Professional Help-seeking

Name: Ms. Claudia P. Vicencio
3233 Grant Street
Hollywood, FL 33021

Faculty Sponsor: Dr. Jill Levenson

Dear Ms. Vicencio:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the IRB have been made. Therefore, I have granted final approval for this study as exempt from further review.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on September 30, 2018. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and
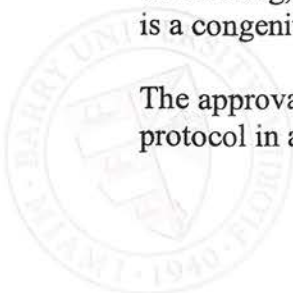
IRB Application for Continuing Review (Progress Report) summarizing study results to date.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, Mrs. Jasmine Trana at (305)899-3020 or send an e-mail to **dfeldman@barry.edu.** Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,

David M. Feldman, PhD
Chair, Institutional Review Board
Barry University
Department of Psychology
11300 NE 2nd Avenue
Miami Shores, FL 33161

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Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.

Appendix C: ICPSR Restricted Data Application

Agreement for the Use of Confidential Data from the General Archive at the Inter-university Consortium for Political and Social Research

Applicant Information Summary

Name of Investigator: Jill Levenson

Your Institution: Barry University

Department: Social Work

Street Address: 11300 NE 2nd Ave

City/State/Zip Code: Miami Shores, FL 33161 United States

Telephone: 305-899-3923

Fax:

Email: jlevenson@barry1.edu

Title of Research Project: The Relationship Between Childhood Adversity and Attitudes Toward Professional Help-seeking

Project Proposal(s):

Topic: This study explores the relationship between exposure to CA and attitudes toward seeking professional help through secondary data analysis of the National Comorbidity Survey—Replication (NCS-R). The NCS-R data set, including the restricted data will be used to satisfy the dissertation research requirements for a doctoral degree in Social Work. Rationale: This doctoral research study is an exploratory study on the relationship between childhood adversity and attitudes toward professional help-seeking in adulthood. The NCS-R data set is contained within the Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003 [United States] (ICPSR 20240) and includes data on exposure to a number of types of childhood adversity including interpersonal loss (e.g. parental death), a risky family environment (e.g. parental metal illness), and maltreatment (e.g. physical abuse and sexual abuse); as well as data on attitudes toward seeking mental health treatment (e.g. level of comfort with talking to a professional about personal problems). Access to restricted data is necessary because data on exposure to sexual abuse in childhood is a key component of "childhood maltreatment" as part of the definition of exposure to childhood adversity in the present study. Personal attitudes toward seeking mental health treatment drive health behavior and service utilization. There is an established correlation between exposure to childhood adversity (CA) and depression in adulthood. Although depression can be treated effectively, to access this treatment, an individual must be willing to seek help. Help-seeking is a form of adaptive coping enabled by emotional competence and the ability to self-disclose to trusted members of one's social network. However, exposure to CA also impairs socialization, emotional regulation and impulse control—psychosocial processes necessary for help-seeking. This study will close a gap in the literature on the impact of exposure to childhood adversity on adults' attitudes toward professional help-seeking.

Appendix A

Data Security Plan

1. Question: I password protected the BIOS so changes cannot be made to the BIOS without authorization.
    Your answer: AGREE.

2. Question: I secured the computer on which the data resides in a locked room.
    Your answer: AGREE.

3. Question: I removed or disabled the network interface card (NIC) so it cannot be used.
    Your answer: AGREE.

4. Question: I restricted access to the data to project personnel using the security features available via the operating system (e.g., login via userid/password and NTFS permissions).
    Your answer: AGREE.

5. Question: I will not copy or move the data out of the secured directory for any reason.
    Your answer: AGREE.

6. Question: I understand that I must either renew this contract or destroy all data after the time period stated in the Data Use Agreement.
    Your answer: AGREE.

7. Question: The physical location of the computer or external hard drive holding the data is secure.
    Your answer: AGREE.

8. Question: No one other than myself and those listed on this contract will have physical access to the computer or external hard drive.
    Your answer: AGREE.

9. Question: During backups of the Computer, the contracted data will be excluded.
    Your answer: AGREE.

10. Question: No one other than myself and those listed on this contract will have permission to use the Computer.
    Your answer: AGREE.

11. Question: Any printed copies of the data will be printed in a secure location, such as the same locked office that contains the Computer.
    Your answer: AGREE.

12. Question: Any printed copies of the data will be destroyed (e.g., shredded) rather than recycled or placed intact in a waste receptacle.
    Your answer: AGREE.

13. Question: You are required to delete all temporary analysis files twice each year. On which two dates each year will you delete these files?
    Your answer:
    06/25 and 12/25

14. Question: You must agree not to move the contracted data from the secure location. Please describe the secure location you will use for storing this confidential research data.
    Your answer:
    Research data will be stored in a stand-alone, non-networked computer attached to an encrypted external hard drive. The computer is located in a secure location inside a locked room, where

only project personnel have access. The encrypted external hard drive will be stored in a locked cabinet, inside a locked room when not in use. The statistical analysis application, SPSS Statistics 25, is installed on the non-networked computer's local hard drive, not on a network server. The non-networked computer used for this research project uses Windows 10. The encrypted external hard drive will not be moved from the secure location specified in this plan. The sensitive data will be password protected and accessed through a local user ID created for that purpose. The research data in this study and program files will have separate directories on the external hard drive. The hard drive will be encrypted with AxCrypt, a whole disk encryption program. SPSS software will be configured to point temporary work files to the encrypted sensitive data directory on the external hard drive. The screensaver on the non-networked computer is password protected and set to activate after 3 minutes of inactivity. Secure Eraser, a secure erasure program will be set to run monthly and after the secure data has been removed from the computer at the end of the contract period (09/30/2018). Each time the sensitive external hard drive is used the authorized researcher will log in using the local user ID, the computer and encrypted external hard drive will not be left unattended, and backup copies of the program and documentation directories will be made each time changes are made. Confidential research data will not be copied or moved out of the secured directory on the encrypted external hard drive for any reason. When not using the confidential research data external hard drive, the computer will be powered down, the external hard drive will be disconnected and locked inside a file cabinet.

15. Question: You must install encryption software for directories containing secure data (e.g., Windows EFS, BestCrypt, Cryptainer). What is the name of the software you've installed?
    Your answer:
    AxCrypt

16. Question: You must install and run a secure erasure program. This program must be run monthly and after the secure data has been removed from the computer at the end of the contract period. By answering this question, you agree to perform this periodic secure erasure. What software did you install to perform this task?
    Your answer:
    Secure Eraser

17. Question: I configured statistical applications to point the temporary working files to the secured data directory. The path to this secure directory is:
    Your answer:
    e:\tmpDATA_CA

18. Question: If ICPSR transmits the restricted-use data to me via physical media such as CD or DVD, I will place that CD or DVD in a secure location, such as a locked drawer in the locked office that contains the computer identified in the security plan.
    Your answer: AGREE.

Appendix B

Supplemental Agreement with Research
Staff And Pledge of Confidentiality

By virtue of my affiliation with this research project I have access to Confidential Data identified in this Agreement. I understand that access to this Confidential Data carries with it a responsibility to guard against unauthorized use and to abide by the Data Security Plan. To treat information as confidential means to not divulge it to anyone who is not a party to the Agreement for the Use of Confidential Data, or cause it to be accessible to anyone who is not a party to that Agreement.

I agree to fulfill my responsibilities on this research project in accordance with the following guidelines:

1. I have read the associated Agreement for the Use of Confidential Data.
2. I am "Research Staff" within the meaning of the agreement.
3. I will comply fully with the terms of the Agreement, including the Data Security Plan.
4. I agree not to permit Confidential Data access to anyone not a party to the Agreement, in either electronic or paper copy.
5. I agree to not attempt to identify private persons as defined in the Agreement for the Use of Confidential Data.
6. I agree that in the event an identity of any private person is discovered inadvertently, I will (a) make no use of this knowledge, (b) advise the Investigator of the incident who will report it to ICPSR, (c) safeguard or destroy the information as directed by the Investigator after consultation with ICPSR, and (d) not inform any other person of the discovered identity.

Claudia P. Vicencio will be asked to sign once the application has been reviewed.

Heidi Heft LaPorte will be asked to sign once the application has been reviewed.

Appendix C

Pledge of Confidentiality

By virtue of my affiliation with this research project I have access to Confidential Data identified in this Agreement. I understand that access to this Confidential Data carries with it a responsibility to guard against unauthorized use and to abide by the Data Security Plan. To treat information as confidential means to not divulge it to anyone who is not a party to the Agreement for the Use of Confidential Data, or cause it to be accessible to anyone who is not a party to that Agreement.

I agree to fulfill my responsibilities on this research project in accordance with the following guidelines:

1. I agree not to permit Confidential Data access to anyone not a party to the Agreement for the Use of Confidential Data, in either electronic or paper copy.
2. I agree to not attempt to identify private persons as defined in the Agreement for the Use of Confidential Data.
3. I agree that in the event an identity of any private person is discovered inadvertently, I will (a) make no use of this knowledge, (b) report the incident to ICPSR, (c) safeguard or destroy the information after consultation with ICPSR, and (d) not inform any other person of the discovered identity.

Jill Levenson will be asked to sign once the application has been reviewed.

Appendix D

Order Summary

This contract covers the following studies and datasets:

*   Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003 [United States]

which includes the following files:

  Study 20240: Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003 [United States]

        Dataset 0: Study-Level Files
               ug20240-all.pdf.zip (User guide)
               doc20240-all_REST.xls (Documentation)
               doc20240-all_diagnostic_algorithms.pdf.zip (Documentation)
               doc20240-all.pdf.zip (Documentation)
               hb20240-all_training.pdf.zip (Handbook)
               doc20240-all_restricted_use_crosswalk.xls.zip (Documentation)
               doc20240-all_public_use_crosswalk.xlsx.zip (Documentation)

        Dataset 5: Restricted-Use Version of the National Comorbidity Survey Replication (NCS-R),
        2001-2003
               cb20240-0005_REST.pdf (Codebook)
               da20240-0005_REST.sav (Data)
               doc20240-0005_REST.xls (Documentation)

        Dataset 6: Restricted-Use Version of the National Survey of American Life (NSAL), 2001-2003
               cb20240-0006_REST.pdf (Codebook)
               da20240-0006_REST.sav (Data)
               doc20240-0006_REST.xls (Documentation)

        Dataset 7: Restricted-Use Version of the National Latino and Asian American Study (NLAAS),
        2002-2003
               cb20240-0007_REST.pdf (Codebook)
               da20240-0007_REST.sav (Data)
               doc20240-0007_REST.xls (Documentation)

Appendix D: Signed Restricted Data Use Agreement

- Agreement -

I. DEFINITIONS

A. "Investigator" is the person primarily responsible for analysis and other use of Confidential Data obtained through this Agreement.

B. "Research Staff" are all persons at the Investigator's institution, excluding the Investigator, who will have access to Confidential Data obtained through this Agreement. Research Staff include project staff or students conducting dissertation or thesis research.

C. "Institution" is the university or research institution at which the Investigator will conduct research using Confidential Data obtained through this Agreement.

D. "Representative" of the Institution is a person authorized to enter into contractual agreements on behalf of Investigator's Institution.

E. "Confidential Data" consist of identifiable private information, linkable to a specific individual either directly or indirectly, for which the individual (whether a person or organization) has the expectation that the information will not be released in a manner that allows public identification of the individual or causes some harm to the individual.

F. "Private Person" means any individual (including an individual acting in his official capacity) and any private (i.e., non-government) partnership, corporation, association, organization, or entity (or any combination thereof), including family, household, school, neighborhood, health service, or institution.

G. "ICPSR" is the Inter-university Consortium of Political and Social Research.

H. "Restricted Data Contracting System (RDCS)" is the web-based system for data contracts at ICPSR.

I. "Data Security Plan" is a component of the Agreement which specifies permissible computer configurations for use of Confidential Data through Investigator responses to a series of questions, and records what the Investigator commits to do in order to keep Confidential Data secure.

J. "Deductive Disclosure" is the discerning of an individual's identity or confidential information through the use of known characteristics of that individual. Disclosure risk is present if an unacceptably narrow estimation of an individual's confidential information is possible or if determining the exact attributes of the individual is possible with a high level of confidence.

K. "Derivative" is a file or statistic derived from the Confidential Data that poses disclosure risk to any Private Person in the Confidential Data obtained through this Agreement. Derivatives include copies of the Confidential Data received from ICPSR, subsets of the Confidential Data, and analysis results that do not conform to the guidelines in Section VI.G.

II. DESCRIPTION OF DISCLOSURE RISK

Deductive disclosure of an individual's identity from research data is a major concern of federal agencies, researchers, and Institutional Review Boards. If a person is known to have participated in ANY survey or study or whose information is known to be included in a database from which the Confidential Data were obtained, then a combination of his or her personal characteristics may allow someone to determine which record corresponds to that individual. Investigators and Institutions who receive any portion of Confidential Data are obligated to protect the individual's confidential information from deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

III. REQUIREMENTS OF INVESTIGATORS

A. Investigators must meet the following criteria:

1. Have a PhD or other terminal degree; and

2. Hold a faculty appointment or research position at Institution.

B. The Investigator assumes the responsibility of completing the RDCS online application and required documents, reports, and amendments. The Investigator agrees to responsibly manage and use Confidential Data and implement all Confidentiality Data security procedures per the Data Security Plan.

IV. REQUIREMENTS OF INSTITUTION

The Institution must meet the following criteria:

A. Be an institution of higher education, a research organization, a research arm of a government agency, or a nongovernmental, not for profit, agency.

B. Have a demonstrated record of using Confidential Data according to commonly accepted standards of research ethics and applicable statutory requirements.

V. OBLIGATIONS OF ICPSR

In consideration of the promises made in Section VI of this Agreement, ICPSR agrees to:

A. Provide the Confidential Data requested by the Investigator in the Confidential Data Order within a reasonable time of execution of this Agreement by appropriate ICPSR officials and to make the Confidential Data available via download or removable media.

B. Provide electronic documentation of the origins, form, and general content of the Confidential Data sent to the Investigator, in the same time period and manner as the Confidential Data.

ICPSR MAKES NO REPRESENTATIONS NOR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE

- Agreement -

USE OF THE CONFIDENTIAL DATA WILL NOT INFRINGE ANY PATENT, COPYRIGHT,
TRADEMARK, OR OTHER PROPRIETARY RIGHTS. Unless prohibited by law,
Investigator and Institution assume all liability for claims for damages
against them by third parties that may arise from the use or disclosure
of the Confidential Data.

VI. OBLIGATIONS OF INVESTIGATOR, RESEARCH STAFF, AND INSTITUTION

Confidential Data provided under this Agreement shall be held by the
Investigator, Research Staff, and Institution in strictest confidence and
can be disclosed only in compliance with the terms of this Agreement. In
consideration of the promises in Section V of this Agreement, and for
use of Confidential Data from ICPSR, the Investigator, Research Staff,
and Institution agree:

A.   That the Confidential Data will be used solely for research or
statistical purposes relative to the research project identified
on the Application for Obtaining Confidential Data accompanying this
Agreement, and for no other purpose whatsoever without the prior consent
of ICPSR. Further, no attempt will be made to identify private persons,
no Confidential Data of private person(s) will be published or otherwise
distributed, and Confidential Data will be protected against deductive
disclosure risk by strictly adhering to the obligations set forth in this
Agreement and otherwise taking precautions to protect the Confidential
Data from non-authorized use.

B.   To supply ICPSR with a completed RDCS online Application for Obtaining
Confidential Data that will include the following:

   1.   A signed Agreement

   2.   Data Security Plan

   3.   Confidential Data Order Summary specifying which files and
   documentation are requested

   4.   Supplemental Agreement with Research Staff signed by each Research
   Staff member

   5.   Pledges of Confidentiality for the Investigator and each Research
   Staff member

   6.   A copy of a document signed by the Institution's Institutional
   Review Board (IRB) approving or exempting the research project

   7.   Investigator curriculum vitae

C.   To comply fully with the approved Data Security Plan at all times
relevant to this Agreement.

D.   That no persons other than those identified in this Agreement or in
   subsequent amendments to this Agreement, as Investigator or
   Research Staff and who have executed this Agreement, be permitted
   access to the contents of Confidential Data files or any files
   derived from Confidential Data files.

E.   That within one (1) business day of becoming aware of any unauthorized

- 3 -

access, use, or disclosure of Confidential Data, or access,
use, or disclosure of Confidential Data that is inconsistent with
the terms and conditions of this Agreement, the unauthorized or
inconsistent access, use, or disclosure of Confidential Data will
be reported in writing to ICPSR.

F. That, unless prior specific approval is received from ICPSR, no
    attempt under any circumstances will be made to link the Confidential
    Data to any individual, whether living or deceased, or with any
    other dataset, including other datasets provided by ICPSR.

G. To avoid inadvertent disclosure of private persons by being
    knowledgeable about what factors constitute disclosure risk and by
    using disclosure risk guidelines, such as but not limited to, the
    following guidelines in the release of statistics or other content
    derived from the Confidential Data.

    1. No release of a sample unique for which only one record in the
        Confidential Data obtained through sampling (e.g., not a census)
        provides a certain combination of values from key variables. For
        example, in no table should all cases in any row or column be
        found in a single cell.

    2. No release of a sample rare for which only a small number of records
        (e.g., 3, 5, or 10 depending on sample characteristics) in
        the Confidential Data provide a certain combination of values
        from key variables. For example, in no instance should the cell
        frequency of a cross-tabulation, a total for a row or column of a
        cross-tabulation, or a quantity figure be fewer than the appropriate
        threshold as determined from the sample characteristics. In
        general, assess empty cells and full cells for disclosure risk
        stemming from sampled records of a defined group reporting the
        same characteristics.

    3. No release of a population unique for which only one record in
        the Confidential Data that represents the entire population
        (e.g., from a census) provides a certain combination of values
        from key variables. For example, in no table should all cases in
        any row or column be found in a single cell.

    4. No release of the statistic if the total, mean, or average is
        based on fewer cases than the appropriate threshold as determined
        from the sample characteristics.

    5. No release of the statistic if the contribution of a few
        observations dominates the estimate of a particular cell. For example,
        in no instance should the quantity figures be released if one case
        contributes more than 60 percent of the quantity amount.

    6. No release of data that permits disclosure when used in combination
        with other known data. For example, unique values or counts
        below the appropriate threshold for key variables in the
        Confidential Data that are continuous and link to other data from
        ICPSR or elsewhere.

    7. No release of minimum and maximum values of identifiable
        characteristics (e.g., income, age, household size, etc.) or reporting

of values in the tails, e.g., the 5th or 95th percentile, from a variable(s) representing highly skewed populations.

8. Release only weighted results if specified in the data documentation.

9. No release of ANOVAs and regression equations when the analytic model that includes categorical covariates is saturated or nearly saturated. In general, variables in analytic models should conform to disclosure rules for descriptive statistics (e.g., see #7 above) and appropriate weights should be applied.

10. In no instance should data on an identifiable case, or any of the kinds of data listed in preceding items 1-9, be derivable through subtraction or other calculation from the combination of tables released.

11. No release of sample population information or characteristics in greater detail than released or published by the researchers who collected the Confidential Data. This includes but is not limited to publication of maps.

12. No release of anecdotal information about a specific private person(s) or case study without prior approval.

13. The above guidelines also apply to charts as they are graphical representations of cross- tabulations. In addition, graphical outputs (e.g., scatterplots, box plots, plots of residuals) should adhere to the above guidelines.

H. That if the identity of any private person should be discovered, then:

1.   No use will be made of this knowledge;

2.   ICPSR will be advised of the incident within five (5) business days of discovery of the incident;

3.   The information that would identify the private person will be safeguarded or destroyed as requested by ICPSR; and

4.   No one else will be informed of the discovered identity..

I. Unless other provisions have been made with ICPSR, all originals and copies of the Confidential Data, on whatever media, shall be destroyed on or before completion of this Agreement or within five (5) days of written request from ICPSR. Investigator will complete and notarize an Affidavit of Destruction, attesting to the destruction of the Confidential Data. Investigators requiring the Confidential Data beyond completion of this Agreement should submit a request for continuation three months prior to the end date of the Agreement. This obligation of destruction shall not apply to Investigator's scholarly work based upon or that incorporates the Confidential Data.

J.   To ensure that the Confidential Data are managed and used in compliance with the terms and conditions of this Agreement and with all applicable statutes and regulations. Noncompliance with this Agreement by any Research Staff hereto shall be deemed noncompliance and a breach

by Investigator and Institution for purposes of section VIII below.

K. To notify ICPSR of a change in institutional affiliation of the
Investigator. Notification must be in writing and must be received
by ICPSR at least six (6) weeks prior to Investigator's last day
of employment with Institution. Investigator's separation from
Institution terminates this Agreement. Investigator may reapply for
access to Confidential Data as an employee of the new institution.
Re-application requires:

    1. Execution of a new Agreement for the Use of Confidential Data
        by both the Investigator and the proposed new institution;

    2. Execution of any Supplemental Agreement(s) with Research Staff
        and Pledges of Confidentiality by Research Staff at the proposed
        new institution;

    3. Preparation and approval of a new Data Security Plan; and

    4. Evidence of approval or exemption by the proposed new
        institution's IRB.

These materials must be approved by ICPSR before Confidential Data
or any derivatives or analyses may be stored or accessed at the new
institution. Investigator must also, prior to the date of relocation,
destroy all electronic and paper files containing Confidential Data
or derivatives or analyses thereof at the original Institution. This
obligation of destruction shall not apply to Investigator's scholarly
work based upon or that incorporates the Confidential Data.

L. That if the Investigator who is changing institutions is unable to
establish and gain approval for the new institution, Investigator will
contact ICPSR to arrange the return to ICPSR for storage of all electronic
and paper Confidential Data and any derivatives or analyses. Upon
approval of the new RDCS online application, ICPSR will return these
stored files to the Investigator. The Investigator will assume all
costs associated with the shipping and storage of these Confidential
Data and any derivatives or analyses. Although the Confidential Data
and any derivatives or analyses will be stored in a secure location,
ICPSR staff assumes no responsibility for these items.

M. That any books, articles, conference papers, theses, dissertations,
reports, or other publications that employed the Confidential Data or
other resources provided by ICPSR reference the bibliographic citation
provided by ICPSR in the study description.

N. That use of the Confidential Data will be consistent with the
Institution's policies regarding scientific integrity and human subjects
research.

O. To respond fully and in writing within ten (10) working days after
receipt of any written inquiry from ICPSR regarding compliance with
this Agreement.

VII. VIOLATIONS OF THIS AGREEMENT

A. The Institution will treat allegations by ICPSR or other parties

of violations of this Agreement as allegations of violations of its policies and procedures on scientific integrity and misconduct. If the allegations are confirmed, the Institution will treat the violations as it would violations of the explicit terms of its policies on scientific integrity and misconduct.

B. In the event Investigator or Institution breaches any provision of this Agreement, they shall be jointly and severally responsible to promptly cure the breach and mitigate any damages. Investigator and Institution hereby acknowledge that any breach of the confidentiality provisions herein may result in irreparable harm to ICPSR not adequately compensable by money damages. Investigator and Institution hereby acknowledge the possibility of injunctive relief in the event of breach, in addition to money damages. In addition, ICPSR may:

1. Terminate this Agreement upon notice and require return of the Confidential Data and any derivatives thereof;

2. Deny Investigator future access to Confidential Data; and/or

3. Report the inappropriate use or disclosure to the appropriate federal and private agencies or foundations that fund scientific and public policy research.

C. Institution agrees, to the extent permitted under the law, to indemnify, defend, and hold harmless The University of Michigan, ICPSR, and the sources of Confidential Data from any or all claims and losses accruing to any person, organization, or other legal entity as a result of Investigator's, Research Staff's, and/or Institution's acts, omissions, or breaches of this Agreement.

VIII. CONFIDENTIALITY

The Institution is considered to be a contractor or cooperating agency of ICPSR; as such, the Institution, the Investigator, and Research Staff are authorized to protect the privacy of the individuals who are the subjects of the Confidential Data by withholding their identifying characteristics from all persons not connected with the conduct of the Investigator's research project. Identifying characteristics are considered to include those data defined as confidential under the terms of this Agreement.

IX. INCORPORATION BY REFERENCE

All parties agree that the following documents are incorporated into this Agreement by reference:

A. The Application for Obtaining Confidential Data

B. A copy of the Institution's IRB approval or exemption of the Research Project

C. The Data Security Plan proposed by the Investigator and approved by ICPSR

X. MISCELLANEOUS

A. All notices, contractual correspondence, and return of data under

- Agreement -

this Agreement on behalf of the Investigator shall be made in writing and delivered to the address below:

Restricted Data Manager
ICPSR
P.O. Box 1248
Ann Arbor, MI 48106-1248

B. This agreement shall be effective for 24 months from execution.

C. The respective rights and obligations of ICPSR and Investigator, Research Staff, and Institution pursuant to this Agreement shall survive termination of the Agreement.

D. This Agreement may be amended or modified only by the mutual written consent of the authorized representatives of ICPSR and Investigator and Institution. Investigator's research project, Data Security Plan, or Research Staff may be amended or modified only by submitting such amendments or modifications to the RDCS and receiving approval from the authorized representatives of ICPSR. This Agreement may be extended only by submitting an extension request to the RDCS and receiving approval from the authorized representatives of ICPSR. Investigator and Institution agree to amend this Agreement to the extent necessary for ICPSR to comply with the requirements of any applicable regulatory authority.

E. The persons signing this Agreement have the right and authority to execute this Agreement, and no further approvals are necessary to create a binding agreement.

F. The obligations of Investigator, Research Staff, and Institution set forth within this Agreement may not be assigned or otherwise transferred without the express written consent of ICPSR.

- Agreement -

Institutional Signatures (please do not use black ink)

Investigator

Signature _Jill Levenson_

Date _3/1/18_

Print Name _Jill Levenson, PhD, LCSW_

Title _Professor of SW_

Institution _Barry U._

Building/Room Number _Powers 216_

Street Address _11300 NE 2nd Ave_

City/State/ZIP _Miami Shores Florida 33161_

Telephone _305-899-3923_

Email _JLevenson@barry.edu_

The below signer represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Agreement on behalf of the Institution. He/she represents and warrants that the execution and delivery of the Agreement and the performance of such party's obligations hereunder have been duly authorized and that the Agreement is a valid and legal agreement binding on such party and enforceable in accordance with its terms.

Representative of Your Institution

Signature _____

Date _03/21/2018_

Print Name _Dr. John Murray_

Title _Provost_

Institution _Barry University_

Building/Room Number _LaVoie_

Street Address _11300 NE 2nd ave_

City/State/ZIP _Miami Shores Fl 33161_

Telephone _305.899.3021_

Email _JMurray@barry.edu_

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