

Winter 2014

# Effects of Parental Alcoholism and Trauma Exposure on Depressive Symptoms: A Path Model with Resilience, Social Support, and Family Satisfaction

Erin Doty Kurtz  
*Old Dominion University*

Follow this and additional works at: [https://digitalcommons.odu.edu/psychology\\_etds](https://digitalcommons.odu.edu/psychology_etds)

 Part of the [Family, Life Course, and Society Commons](#), [Social Psychology Commons](#), and the [Substance Abuse and Addiction Commons](#)

---

## Recommended Citation

Kurtz, Erin D.. "Effects of Parental Alcoholism and Trauma Exposure on Depressive Symptoms: A Path Model with Resilience, Social Support, and Family Satisfaction" (2014). Master of Science (MS), thesis, Psychology, Old Dominion University, DOI: 10.25777/ba52-ch85  
[https://digitalcommons.odu.edu/psychology\\_etds/113](https://digitalcommons.odu.edu/psychology_etds/113)

This Thesis is brought to you for free and open access by the Psychology at ODU Digital Commons. It has been accepted for inclusion in Psychology Theses & Dissertations by an authorized administrator of ODU Digital Commons. For more information, please contact [digitalcommons@odu.edu](mailto:digitalcommons@odu.edu).

**EFFECTS OF PARENTAL ALCOHOLISM AND TRAUMA EXPOSURE ON  
DEPRESSIVE SYMPTOMS: A PATH MODEL WITH RESILIENCE, SOCIAL  
SUPPORT, AND FAMILY SATISFACTION**

by

Erin Doty Kurtz  
B.A. May 2002, Principia College

A Thesis Submitted to the Faculty of  
Old Dominion University in Partial Fulfillment of the  
Requirements for the Degree of

MASTER OF SCIENCE

PSYCHOLOGY

OLD DOMINION UNIVERSITY  
December 2014

Approved by:

\_\_\_\_\_  
Michelle L. Kelley (Director)

\_\_\_\_\_  
Philip J. Langlais (Member)

\_\_\_\_\_  
James F. Paulson (Member)

## **ABSTRACT**

### **EFFECTS OF PARENTAL ALCOHOLISM AND TRAUMA EXPOSURE ON DEPRESSIVE SYMPTOMS: A PATH MODEL WITH RESILIENCE, SOCIAL SUPPORT, AND FAMILY SATISFACTION**

Erin Doty Kurtz  
Old Dominion University, 2014  
Director: Dr. Michelle L. Kelley

The goal of this study was to explore the different effects of parental alcoholism and history of trauma exposure on depressive symptoms in an emerging adult, college population. In particular, mediating effects of resilience, social support, and family satisfaction were evaluated for both parental alcoholism and previous interpersonal trauma exposure using structural equation modeling (SEM). Participants were 708 students (217 male, 491 female) attending a large mid-Atlantic state university. It was anticipated that social support and family satisfaction would be key mediators between parental alcoholism and depressive symptoms, while resilience and social support would be significant mediators between interpersonal trauma exposure and depressive symptoms. A final well-fitting model suggests that parental alcoholism and interpersonal trauma exposure have different mediational pathways to depressive symptoms, with social support and resilience mediating the relationship of parental alcoholism and depressive symptoms, and family satisfaction, social support, and resilience mediating the relationship of trauma exposure and depressive symptoms. Parental mental illness was revealed as an important covariate with a significant direct and indirect effect on depressive symptoms through family satisfaction, social support, and resilience. Parental alcoholism did not have a direct effect on depressive symptoms once included in the

model with interpersonal trauma exposure and parental mental illness. Results suggest that screening college-attending emerging adult children of alcoholics (ACOAs) for history of interpersonal trauma exposure and parental mental illness would be useful in understanding the development of depressive symptoms and informing treatment interventions. In particular, individuals with a history of interpersonal trauma exposure or parental mental illness may benefit from therapy that addresses issues related to these experiences, while ACOAs without these adverse family experiences may benefit more from interventions that focus in part on developing interpersonal skills, which may improve clients' development of social support and, in turn, increase resilience.

## ACKNOWLEDGMENTS

I would first like to thank Dr. Michelle Kelley for her willingness to accept me into her research laboratory and for her guidance and patience throughout this thesis process over the past two years. I also am very grateful for my other committee members, Dr. James Paulson and Dr. Philip Langlais, for their contributions to this project. I would like to thank my friends and family for their encouragement of my pursuits, especially the members of my cohort, Sara Bock and Takeshia Williams, who have provided me with support in the form of listening ears and empathic understanding. Also, thanks go out to my friend Sara Alldredge for her last-minute editing assistance. Finally, I would like to extend special thanks to my husband, Jacob Kurtz. Without his extensive support, love, and friendship this project and my academic pursuits would not have been possible.

## TABLE OF CONTENTS

	Page
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
 Chapter	
I. INTRODUCTION .....	1
NEGATIVE MENTAL HEALTH OUTCOMES OF ACOAS .....	2
HETEROGENEITY OF ACOAS .....	3
MEDIATING FACTORS .....	7
CURRENT RESEARCH DIRECTIONS .....	11
II. METHOD .....	15
PARTICIPANTS AND PROCEDURES .....	15
MEASURES .....	15
ACOA SCREENING TEST .....	15
HISTORY OF EXPOSURE TO INTERPERSONAL TRAUMA .....	18
DEPRESSIVE SYMPTOMS .....	20
SOCIAL SUPPORT .....	28
RESILIENCE .....	22
FAMILY SATISFACTION .....	26
PARENTAL MENTAL ILLNESS .....	30
DEMOGRAPHIC QUESTIONNAIRE .....	31
III. RESULTS .....	32
DATA PREPARATION .....	32
POWER ANALYSIS .....	38
MODEL SPECIFICATION .....	41
IV. DISCUSSION .....	49
HYPOTHESIS 1 .....	49
HYPOTHESIS 2 .....	51
HYPOTHESIS 3 .....	53
HYPOTHESIS 4 .....	55
CLINICAL IMPLICATIONS .....	59
LIMITATIONS .....	61
FUTURE DIRECTIONS .....	63
V. CONCLUSION .....	64
REFERENCES .....	66

APPENDICES .....	78
A. CHILDREN OF ALCOHOLICS SCREENING TEST .....	78
B. TRAUMA LIFE EVENTS QUESTIONNAIRE .....	81
C. CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SURVEY .....	82
D. CONNOR-DAVIDSON RESILIENCE SCALE .....	83
E. FAMILY SATISFACTION SCALE .....	84
F. SOCIAL SUPPORT QUESTIONNAIRE, SHORT FORM .....	85
G. DEMOGRAPHIC QUESTIONNAIRE.....	87
VITA .....	91

**LIST OF TABLES**

Table	Page
1. Demographic Information for Full Sample and Final Analytic Sample.....	35
2. Bivariate Correlations between Study Variables .....	39
3. Descriptive Statistics for Continuous Study Variables.....	40
4. Maximum Likelihood Estimates for Direct and Indirect Effects of Final Model.....	47



**LIST OF FIGURES**

<b>Figure</b>	<b>Page</b>
1. Hypothesized Pathways between ACOA Status, Interpersonal Trauma Exposure, and Depressive Symptoms.....	13
2. Model 2 with Covariates Included and Two Additional Paths .....	44
3. Final Model with Standardized Path Coefficients.....	46

## CHAPTER I

### INTRODUCTION

Previous studies suggest that about 20% to 30% of college students meet criteria to be considered adult children of alcoholics (ACOAs; e.g. Grant, 2000; Harter & Taylor, 2000; Nicholas & Rasmussen, 2006). ACOAs are often found to be at a greater risk of developing depression and depressive symptoms than those from families without parental alcoholism (e.g., Harter, 2000; Sher, 1991). However, researchers have often made conclusions about ACOAs as a homogenous group despite many factors that suggest the heterogeneity of ACOAs. One factor that has been explored in the literature is exposure to traumatic events. The presence of alcoholism in the home increases the likelihood that ACOAs are exposed to family dysfunction and traumatic experiences such as physical abuse, neglect, and sexual assault (e.g., Nicholas & Rasmussen, 2006; Sher, 1991). Studies of childhood trauma in college ACOAs suggest that around 50% of college student ACOAs also report exposure to trauma in childhood (e.g., Fox & Gilbert, 1994; Hall & Webster, 2007). It is possible that ACOAs with traumatic experiences may have reduced resources with which to cope with adverse experiences compared to their ACOA counterparts without trauma exposure. Several factors have been shown to mediate the relationship between ACOA status and depression. However, it is unknown whether these mediating factors are unique to all ACOAs or if ACOAs with and without exposure to additional trauma might be differentially affected by these mediators.

This study examined whether parental alcoholism among emerging adult COAs (individuals between ages 18 and 25; Arnett, 2000) was directly associated with depressive symptoms after accounting for the effects of interpersonal trauma on

depressive symptoms. In addition, the degree to which social support, resilience, and family satisfaction mediate any potential relationships between ACOA status and/or interpersonal trauma exposure and depressive symptoms were explored.

### **Negative Mental Health Outcomes of ACOAs**

A wealth of research has been dedicated to exploring the potential negative effects parents' alcohol problems can have on the mental health of their children. Three of the most commonly identified concerns in children of alcoholic parents are depression (e.g., Harter, 2000; Sher, 1991), alcohol and drug use (Elliott, Carey & Bonafide, 2012; Mathew, Wilson, Blazer, & George, 1993; Wright & Heppner, 1993), and anxiety (Harter, 2000; Mathew et al., 1993). When Cuijpers, Langendoen, and Bijl (1999) reviewed responses from the Netherlands Mental Health Survey and Incidence Study of respondents ages 18 to 64, they found that ACOAs had a higher lifetime, 12- and 1-month prevalence of mood disorders, anxiety, and substance abuse or dependence than non-ACOA. No significant group differences were found in the prevalence of schizophrenia or eating disorders. Additionally, these researchers found a significantly earlier mean age of onset of mood and anxiety disorders in ACOAs than non-ACOA. However, contradictory research findings regarding depression, alcohol problems, and anxiety in ACOAs suggest that the relationship between parental alcoholism and mental health is not yet clearly defined.

For example, Mathew et al. (1993) found that men with at least one alcoholic parent were more likely to report alcohol and drug abuse than their male non-ACOA counterparts in a community sample; the same was not true for women. Wright and Heppner's (1993) study of college students revealed that, regardless of gender, ACOAs

were at increased risk for substance abuse and problems. A recent meta-analysis by Elliott et al. (2012) of the literature on alcohol use and problems in university student ACOAs revealed that ACOAs were more likely to be at risk for negative alcohol consequences and alcohol use disorder (AUD) symptoms than non-ACOAs. However, there were no significant differences in alcohol consumption between ACOAs and non-ACOAs. Additionally, studies of the transmission of alcoholism from parents to offspring have demonstrated that alcoholism is due in part to genetics, with heritability estimates from twin studies averaging .50 for quantity consumed and .40 for frequency of drinking (Merikangas, 1990).

The relationship of depression and depressive symptoms to parental alcoholism has been difficult to verify and explain. For example, across clinical, community, and college samples, studies have demonstrated that ACOAs are more prone to report depression and depressive symptoms than non-ACOAs (Harter, 2000; Kelley et al., 2010; Klostermann et al., 2011; Sher, 1991; Yama, Tovey, Fogas, & Teegarden, 1992). However, this relationship decreases or becomes nonsignificant when variables such as parental mental illness (Williams & Corrigan, 1992) and family violence (Nicholas & Rasmussen, 2006) are controlled. Some studies have been unable to detect significant differences between ACOAs and non-ACOAs in self-reported depression or depressive symptoms (Fox & Gilbert, 1994; Hall & Webster, 2002; Johnson, Sher, & Rolf, 1991).

### **Heterogeneity of ACOAs**

Although researchers generally compare ACOAs to non-ACOAs to establish relationships between parental alcoholism and outcome variables, it is likely that other group factors should be taken into consideration. Conflicting and inconsistent research

findings regarding mental health outcomes of ACOAs underscore that ACOAs may not be adequately defined as a homogenous group. Those who have reviewed the ACOA literature have questioned whether a specific “ACOA syndrome” truly exists (Harter, 2000) and whether negative effects generally attributed to parental alcoholism may be more accurately regarded in the context of other familial factors, such as gender of the alcoholic parent, alcoholic subtype of the parent, child abuse, family cohesion, and family psychopathology (Harter, 2000; Johnson et al., 1991; Sher, 1991).

Researchers are increasingly looking at contextual factors in order to explore what aspects of having a parent with alcohol problems are most threatening to ACOAs’ mental health. Gender of the alcoholic parent and the child are factors that have been considered. For example, in research using a community sample, sons of problem-drinking women more frequently reported mood and anxiety disorders than sons with non-alcoholic mothers, but did not report an increased rate of substance abuse or disorder (Cuijpers et al., 1999). Further review of the data revealed that, as compared to individuals who reported no problem-drinking parent, offspring who reported a father with a drinking problem reported a greater prevalence of one or more psychiatric diagnoses. This finding was true for both male and female offspring. These researchers noted that significant risk factors for the development of a mood disorder included male gender, father’s problem drinking, anxiety and depression in parents, childhood emotional neglect, and sexual, psychological, and physical abuse (Cuijpers et al., 1999).

It is not surprising that many of the familial risk factors for the development of depression are commonly experienced by children with one or more alcoholic parent. For example, in Sher’s (1991) review of the literature on COAs, he noted that in both

clinical and non-clinical samples an alcoholic parent was more likely than a parent without an alcohol use disorder to have at least one additional psychiatric diagnosis. Following their study of university students, Nicholas and Rasmussen (2006) found that parental alcohol abuse was significantly related both to experiencing abuse and witnessing violence between parents. Sher (1991) cited multiple studies that revealed higher levels of conflict and lower levels of family cohesion in alcoholic families. Baker and Williamson (1989) found similar psychological profiles (higher than normal ratings on the Beck Depression Inventory [BDI] and the Symptom Checklist [SCL-90]) in both ACOAs and individuals reporting family dysfunction.

However, it is important not to assume that all ACOAs come from dysfunctional families. Heterogeneity of ACOAs is again underscored by research that, similar to non-ACOA, college-attending ACOAs perceive their families to be widely dispersed on a scale from functional to dysfunctional (Wright & Heppner, 1993). These findings suggest that the effects of parental alcoholism may vary with the degree of family problems.

If children raised with one or more alcoholic parent are more likely to be exposed to family-related risk factors for depression, it follows that these factors may be confounds when attempting to determine a direct relationship between parental alcoholism and the presence of depression or depressive symptoms in their offspring. Recent research has tried to tease out these interrelationships and has revealed that negative mental health outcomes may not be related to ACOA status as much as other risk factors that are common in ACOAs. When Williams and Corrigan (1992) surveyed university undergraduate and graduate students, they found that adult children who

reported having parents with severe mental illness (ACMIs) reported significantly higher depression and trait anxiety than normal controls (those without parental mental illness or alcoholism). However, there were no significant differences in depression and anxiety for those reporting parental alcoholism compared to normal controls. Similarly, Harter and Vanecek (2000) found that when the effects of abuse and the family of origin environment were controlled for, parental alcoholism was no longer related to distress.

The findings from studies that have examined the effects of trauma exposure versus ACOA status on depression have had mixed results. For example, in a review of the effects of childhood sexual, physical, and emotional abuse on depression in university students, Harter and Taylor (2000) found that, compared to a non-abused, non-ACOA group, the ACOA group did not report significantly higher levels of depressive symptoms. In contrast, each of the abuse groups reported significantly higher depression scores than the non-abused, non-ACOA group. Similarly, in a study of college women, Fox and Gilbert (1994) found that ACOAs were not higher on depressive symptoms than those without trauma exposure, but that those participants who had experienced physical abuse reported significantly more depressive symptoms on the BDI. Hall and Webster (2002) also used the BDI to measure depressive symptoms in a gender-mixed university population, but found contradictory results, revealing no significant differences in the overall BDI scores among ACOA, childhood trauma, and control groups. In another study, Yama et al. (1992) found main effects of both ACOA status and childhood sexual abuse on depression, but the interaction of ACOA status and childhood sexual abuse was not significant. However, the results of the Yama et al. study revealed that participants who experienced both childhood sexual abuse and parental alcoholism reported higher

levels of depression than those experiencing only one of these risk factors. Their findings parallel other research that has revealed no significant interaction of ACOA status and abuse history (Harter & Taylor, 2000) on depression, as well as other research that has shown that the severity of depressive symptoms increases with the number of traumas experienced (Fox & Gilbert, 1994). Despite these studies, whether being a child of an alcoholic predicts depressive symptoms as a young adult when controlling for trauma exposure remains unclear.

Previous studies have examined different types of traumatic experiences in ACOAs. The types of traumatic experiences have included childhood trauma (Hall & Webster, 2002), childhood sexual abuse (Yama et al., 1992), and physical abuse (Fox & Gilbert, 1994), among others. Studies have suggested that exposure to interpersonal violence (i.e., physical or sexual assault, witnessing violence) confers greater risk of mental health disorders than other traumatic events (Kilpatrick et al., 2003). Research has also suggested that victimization confers greater risk of psychiatric diagnosis than witnessing violence or exposure to disasters or accidents (Ford, Elhai, Connor, & Frueh, 2010). For the purposes of this study, it was determined that looking at lifetime interpersonal victimization (sexual or physical abuse or assault) and witnessing family violence would confer the most risk for developing depressive symptoms and would be most likely to confound the relationship between ACOA status and depressive symptoms.

### **Mediating Factors**

To better understand why parental alcoholism may be related to depressive symptoms in adults, researchers have begun to look at factors that mediate the relationship between ACOA status and depression (e.g., Kashubeck, 1994; Kelley et al.,



2010; Lease, 2002; Lee & Williams, 2013). Additionally, researchers have questioned whether ACOAs who develop depression may differ from those with traumatic childhood experiences on factors that also mediate the relationship between trauma exposure and depression (Hall & Webster, 2002; Hall & Webster, 2007; Yama et al., 1992), such as resilience and social support.

Not all ACOAs will develop depression or depressive symptoms. Many ACOAs are able to live productive lives, attend college, have quality relationships, and are well-adjusted. Similarly, not all trauma survivors develop negative mental health outcomes, and for some, traumatic experiences can result in posttraumatic growth (see Tedeschi, Park, & Calhoun, 1998 for a review). One factor that has been found to predict positive mental health outcomes following negative events is resilience. Identified characteristics of well-adjusted ACOAs include high self-esteem and locus of control, ability to reframe negative events in a positive light, religion, reliance on supportive others, and self-efficacy (Lee & Williams, 2013; Moe, Johnson, & Wade, 2007; Walker & Lee, 1998; Werner & Johnson, 2004). These characteristics are often the basis for measures of the construct of resilience. Whether ACOAs are lower in resilience than non-ACOA is unclear. Lee and Williams (2013) found no significant correlation between parental alcoholism and resilience in a sample of Korean students attending college in the United States. Rather, the relationship between parental alcoholism and resilience was fully mediated by family cohesion and social support. However, in a study of college students in Korea, Kim and Lee (2011) found that ACOAs had lower resilience scores than non-ACOA. Kim and Lee also found that, among ACOAs, higher resilience was significantly associated with higher self-esteem, social support, and family adaptability

and cohesion. There is limited research into the differences in the role that resilience plays in the prevention of depression between ACOAs and trauma survivors, yet looking into this distinction could inform intervention selection and prevention efforts. Results from Hall and Webster (2002) suggest that ACOAs with no trauma exposure are lower in trust than non-ACOA trauma survivors, and that ACOAs with trauma exposure have lower levels of initiative than the ACOA-only or trauma-only group. However, no studies have looked at differences between ACOAs and trauma survivors using a validated measure of the construct of resilience.

Another factor that has been shown to mediate the relationship between ACOA status and depression is social support. In his review of the COA literature, Sher (1991) noted that social support from families was lower in COAs than non-COAs. Similarly, Kelley et al. (2010) found that relationships with mothers, fathers, and peers were less positive for university student ACOAs. Although these studies suggest a strong relationship between ACOA status and social support, other studies of college-student ACOAs have found no differences in perceived social support between ACOAs and non-ACOAs (Kashubeck, 1994; Wright & Heppner, 1993). Conflicting results within college ACOA populations are not surprising, given that these ACOAs are likely more well-adjusted than ACOAs who do not attend college. In part, the conflicting results may also be due to the need for large sample sizes and the use of well-defined measures to reveal significant differences among groups.

Several studies have documented the mediational effects of social support on depression in ACOAs (Kelley et al., 2010; Lee & Williams, 2013; Williams & Corrigan, 1992), suggesting further evidence that children raised with parental alcoholism perceive

lower social support than non-ACOA's. Williams and Corrigan (1992) found that controlling for social support reduced differences in depression across ACOA, children of parents with mental illness (ACMI), and normal control groups. Positive maternal, paternal, and peer relationships were also found to fully mediate the relationship between ACOA status and depressive symptoms in college students (Kelley et al., 2010). The results of these studies have implications for assessing perceived social support and targeting interventions to this mediating factor in ACOA's who present for treatment of depression or depressive symptoms.

Given the relationship between ACOA status and family dysfunction, lower ratings of family cohesion, and higher ratings of family conflict, it is likely that ACOA's will be less satisfied with their family interactions. Research has suggested that actual events or reports of events may be less influential than people's perception of events or the meaning people attach to them (Nicholas & Rasmussen, 2006). According to interpersonal theories, interpersonal patterns and attitudes are rooted in early interactions with family members and other significant others (Teyber & McClure, 2011). If ACOA's are in high-conflict or low-cohesion families and are dissatisfied with familial relationships, ACOA's' ability to create other meaningful, satisfactory relationships could be negatively affected. It is anticipated that family satisfaction will contribute additional predictive value to the relationship between ACOA status, resilience and social support, and, through these factors, depressive symptoms. It is also anticipated that ACOA's will differ from those with interpersonal trauma exposure on family satisfaction, which will allow for further discrimination between mediating factors for ACOA status or trauma on depressive symptoms.

## **Current Research Directions**

Previous research has been contradictory in regards to a direct relationship between ACOA status and depression or depressive symptoms, particularly when background variables such as trauma and family mental illness are considered. This study explored this relationship using a proposed path model with ACOA status and exposure to interpersonal trauma as primary exogenous variables and family satisfaction, social support, and resilience as mediators. It was expected that ACOA status would be positively correlated with reported depressive symptoms, but that once added to the model with interpersonal trauma, mediating variables, and control variables, ACOA status would no longer significantly predict depressive symptoms (Hypothesis 1).

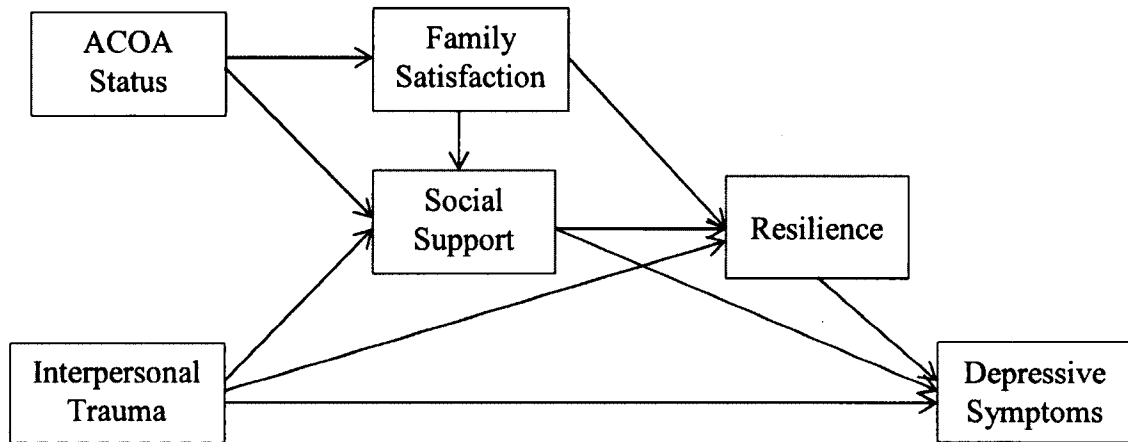
Given previous research, it was hypothesized that both ACOA status and interpersonal trauma exposure would be negatively correlated with social support, but that only interpersonal trauma exposure would be negatively correlated with resilience and only ACOA status would be negatively correlated with family satisfaction (Hypothesis 2).

Based on prior research, particularly using the best-fitting model from Lee and Williams (2013) as a guide, this study proposed a model to examine the best fit pathways between ACOA status and depressive symptoms and interpersonal trauma exposure and depressive symptoms. Lee and Williams' study revealed that the relationship between ACOA status and depressive symptoms is likely mediated by social support, resilience, and sense of belonging in a college-attending Korean sample. Family violence, family cohesion, and number of parental mental health problems were reviewed by Lee and Williams as possible influential variables in the model, with family cohesion and parental

mental health included as exogenous variables in their final model. The proposed model for the current study is presented in Figure 1, and extends the results from Lee and Williams by incorporating interpersonal trauma as an exogenous variable and by examining the mediating properties of family satisfaction in addition to social support and resilience. The model predicted that ACOA status would have an indirect effect on depressive symptoms through family satisfaction, social support, and resilience (Hypothesis 3). It was further anticipated that interpersonal trauma exposure would have a direct effect on depressive symptoms as well as an indirect effect on depressive symptoms through social support and resilience, but not through family satisfaction (Hypothesis 4).

It was anticipated that factors such as parental mental illness, gender of the alcoholic parent, previous mental health treatment or medication, and gender of offspring may confound the relationship between parental alcoholism and depressive symptoms. These factors were evaluated for their relationship with depressive symptoms and were incorporated in the model as covariates as appropriate.

It was hoped that the results of this research would help identify whether emerging adult COAs without exposure to interpersonal trauma have a decreased risk of developing depressive symptoms over those reporting interpersonal trauma exposure. Also, by examining mediators that influence the relationship between parental alcoholism and depressive symptoms, interventions can be better targeted at increasing protective factors for emerging adult COAs who present for treatment and in emerging adult COAs at risk for developing depression. Knowing whether mediational pathways differ for those with interpersonal trauma exposure versus parental alcoholism can assist mental



*Figure 1.* Hypothesized pathways between ACOA status, interpersonal trauma exposure, and depressive symptoms.

health practitioners determine the most effective intervention approaches for these two populations. This research is particularly important in an emerging adult population, such as those attending college, because many mental health concerns develop during these transformative years, and because these students are often able to access free mental health care in college counseling centers.

## CHAPTER II

### METHOD

#### **Participants and Procedures**

Participants were 708 students at a large university in the mid-Atlantic United States. Because the study is focused on an emerging adult population (Arnett, 2000), only students between the ages of 18 and 25 were eligible to participate. Participants were an average of 20.17 years of age ( $SD = 1.73$ ). The majority of participants identified as Caucasian (47.6%) or African-American (33.3%) and female (69.4%).

The survey was available through an online research board accessible only to students currently enrolled in psychology courses. In exchange for their completion of the survey, participants received research credit or extra credit that could be applied to their psychology courses. After providing informed consent, participants completed a series of self-report measures through the online survey regarding experience of traumatic events, parental drinking, depressive symptoms, perceived social support, family satisfaction, resilience, and demographic information. Measures were presented in a random order to prevent fatigue effects on any specific measure. Data were collected from November, 2013 through April, 2014. This study was approved by the College of Sciences Human Subjects Review Committee at the participating university prior to data collection (proposal number 013-014-012).

#### **Measures**

**ACOA screening test.** The Children of Alcoholics Screening Test (CAST; Jones, 1983; see Appendix A) is a 30-item self-report retrospective questionnaire to identify individuals who resided with at least one alcoholic parent prior to age 16. The



measure can be used with children, adolescents, or adults and is intended to evaluate respondents' feelings, attitudes, perceptions, and experiences related to their parents' drinking behavior (Pilat & Jones, 1984/85). It was developed based on Jones's group experiences with clinically diagnosed children of alcoholics and case studies taken from the literature (Pilat & Jones, 1984/85). Sample items include: "Have you ever thought that one of your parents had a drinking problem?" "Have you ever been blamed for a parent's drinking?" and "Did you ever protect another family member from a parent who was drinking?" Participants respond *yes* (scored as 1) or *no* (scored as 0) to each item. The number of affirmative responses is tallied to generate a total CAST score. Respondents with a total score of 6 or greater are categorized as having experienced parental alcohol abuse and are categorized as adult children of alcoholics (ACOAs). Those with an overall CAST score of 0 or 1 are categorized as non-ACOAs, whereas respondents with a total CAST score of 2 to 5 are considered indeterminate for ACOA status, and were excluded from analyses in this study.

Reliability and validity of the CAST have been extensively studied. Internal consistency reliability has been found to be high in several studies, with Spearman-Brown split-half reliability coefficients of .96 (Charland & Coté, 1998; Dinning & Berk, 1989) or .98 (Pilat & Jones, 1984/85) and Cronbach's alpha coefficients ranging from .95 to .98 (Charland & Coté, 1998; Dinning & Berk, 1989; Sheridan, 1995; Staley & el-Guebaly, 1991). Confirmatory factor analyses have consistently indicated a unidimensional structure, with the first factor accounting for a substantially higher percentage of the measure's variance than any other factor in both 3- and 5-factor models (Charland & Coté, 1998; Sheridan, 1995; Staley & el-Guebaly, 1991). Additionally,

these studies found that nearly every item significantly correlated with the first factor. Cronbach's alpha in this study was .96.

The CAST has been used both as a screener of probable parental alcohol use disorder and as a continuous measure of the severity of parental alcohol problems. A study of ACOAs within an inpatient psychiatric sample (Staley & el-Guebaly, 1991) revealed that the total CAST score was significantly correlated with problems (physical, psychological, legal, job-related, family-related) due to alcohol abuse ( $r = .84$ ) that affected the parent, as reported by their children. However, the CAST is most commonly used with the author-identified cutoff score of 6 or greater indicating parental alcoholism. Research has shown this cutoff to have high discriminant validity between identified groups of COAs and non-COAs. For example, Pilat and Jones (1984/85) found that both self-reported ACOAs and ACOAs whose parents were clinically diagnosed scored significantly higher on the CAST than those in the control group, with a validity coefficient of  $\kappa = .78$ . Additionally, these researchers found that the cutoff score of 6 or greater accurately identified 100% of the ACOAs. Staley and el-Guebaly's (1991) study with an inpatient psychiatric sample revealed a validity coefficient of  $\kappa = .89$ , with low false positive (2.1%) and false negative (6.9%) percentages. Sheridan's (1995) study revealed a 0% false positive rate and a 6.4% false negative rate, with  $\kappa = .82$  using a cut score of 6 with both clinical and non-clinical participants. Charland and Coté (1998) compared results of the CAST to diagnoses of parental alcohol abuse and dependence using the Structured Clinical Interview for DSM-III (SCID), and found that, using 6 as a cutoff score, the CAST had sensitivity of 78.4% and a specificity of 98.0%. Hodgins and Shimp (1995) compared CAST results with those of the Family History Research

Diagnostic Criteria Interview (FH-RDC) in an inpatient sample, and found hit rates of 96% using both a conservative CAST cutoff (score of 6 or greater) and a liberal CAST cutoff (score of 2 or greater). Specificity was higher when using the conservative cut score (100%) than when using the liberal cut score (86%). These studies have verified that using the recommended cut score of 6 appears to effectively discriminate those who are ACOAs from those who are not.

Research by Sheridan (1995) into the convergent and divergent construct validity of the CAST demonstrated that it was significantly negatively correlated with measures of family cohesion ( $r = -.55$ ), family competence ( $r = -.68$ ), and individuation with spouse/partner ( $r = -.21$ ) and parents ( $r = -.54$ ). Moreover, this study revealed no significant association of the CAST with age, gender, education, income, employment, marital status, or number of children. Additional research into the CAST's convergent and divergent validity has also found significant correlations in anticipated directions between the CAST and family variables, such as family cohesion ( $r = -.19$ ), family support ( $r = -.17$ ), and family conflict ( $r = .14$ ) (Dinning & Berk, 1989). These studies cited that all correlations were in the expected directions and support the construct validity of the CAST.

**History of exposure to interpersonal trauma.** The Trauma Life Events Questionnaire (TLEQ; Kubany et al., 2000; see Appendix B) is a 22-item self-report questionnaire that assesses exposure to 21 types of potentially traumatic events, such as natural disasters, exposure to warfare, being threatened with death or serious bodily harm, witnessing violence, and nonconsensual sexual contact. One open-ended question at the end of the survey assesses exposure to other life-threatening or highly disturbing

events not included in the other 21 items. Respondents are asked to indicate the frequency of their exposure to each type of traumatic event assessed (*never, once, twice, 3 times, 4 times, 5 times, or more than 5 times*), and then to indicate whether the traumatic event evoked intense fear, helplessness, or horror (Kubany et al., 2000).

Because physical and sexual assault, and witnessing violence may confer greater risk than other types of traumas (e.g., natural disasters), the following items were used to evaluate interpersonal trauma exposure: (a) robbery involving a weapon, (b) severe assault by an acquaintance or stranger, (c) threats of death or serious bodily harm from another person, (d) childhood physical abuse (i.e., punishment causing burns, cuts, bruises, or broken bones), (e) witnessing family violence, (f) intimate partner abuse, and (g) sexual abuse as a child, adolescent, or adult. To determine whether a participant had exposure to interpersonal trauma, respondents endorsing at least one of these interpersonal traumatic events that also involved intense fear, helplessness, or horror were categorized as having a history of interpersonal trauma (coded as 1). Respondents endorsing an interpersonal traumatic event that did not evoke fear, helplessness, or horror and those not endorsing any interpersonal traumatic events were categorized as not having a history of interpersonal trauma (coded as 0).

Data on the TLEQ's temporal stability (test-retest reliability) have indicated kappa coefficients of .60 or above for 12 of the 21 items, indicating substantial agreement, and kappa values falling within the moderate agreement range of .40 to .60 for eight additional items over a two-week test-retest interval (Kubany et al., 2000). Pearson product-moment correlations of frequency of traumatic event occurrence between Time 1 and Time 2 (two-week interval) ranged from .50 to .93, with an average

correlation of .77. In creating the TLEQ, Kubany et al. (2000) established content validity for the traumatic events by having seven PTSD experts evaluate the relevance and representativeness of the individual items as well as the general item pool. The TLEQ questionnaire has been shown to have good overall convergent validity with a trauma events interview administered both on the same day and one week later (Dedert et al., 2009; Kubany et al., 2000). Individuals identified as having PTSD using the Distressing Events Questionnaire (DEQ) reported having experienced significantly more types of traumatic events on the TLEQ than individuals without PTSD, significantly more total traumatic events on the TLEQ, and significantly more events that evoked intense fear, helplessness, or horror, thus providing support for the TLEQ's discriminative validity (Kubany et al., 2000).

**Depressive symptoms.** The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; see Appendix C) is a 20-item self-report questionnaire designed to assess current level of depressive symptomatology within the general population, with emphasis on the affective component rather than physiological or functional components. For example, items assess: depressed mood, guilt, helplessness, hopelessness, worthlessness, loss of appetite, sleep disturbance, and other symptoms related to depression. Respondents indicate how often during the past week they experienced these symptoms on a scale from 0 (*rarely or none of the time; less than 1 day*) to 3 (*most or all of the time; 5-7 days*). Four items inquire about positive opposite constructs (e.g., *I was happy, I enjoyed life*); these items were included to discourage a purely negative response set and are reverse-scored (Radloff, 1977). The range for total scores is 0 to 60. Although cutoff scores have been used as a screening measure to identify those at risk for

depression, continuous CES-D scores are also widely employed for research purposes. Moreover, dichotomization of a continuous measure may have several drawbacks, such as loss of effect size or statistical significance, loss of information on individual differences, and reduction in reliability according to MacCallum, Zhang, Preacher, and Rucker (2002). Given that the present study's aim was to evaluate individual differences reflected in the severity of depressive symptoms, the CES-D was employed as a continuous measure in this study.

The CES-D has good internal consistency in the general population ( $\alpha = .85$ ) and in a psychiatric inpatient sample ( $\alpha = .90$ ; Radloff, 1977). Because respondents rate symptoms for the past two weeks, the CES-D is a state-based measure of depressive symptoms. For this reason, test-retest reliability is generally modest ( $r = .54$  at best; Radloff, 1977). As might be expected, longer intervals between testing and life events reduce test-retest reliability.

In creating the CES-D, items were selected from other previously validated depression scales (Radloff, 1977). The CES-D has demonstrated good construct validity with moderate to high correlations with other measures of depression. For example, Radloff (1977) cited moderate correlations with depressive severity ratings by nurse-clinicians within a psychiatric inpatient sample ( $r = .56$ ). In a college population, the correlation between the Beck Depression Inventory (BDI), frequently considered the "gold standard" of depression measures, and the CES-D was  $r = .86$  (Santor, Zuroff, Ramsay, Cervantes, & Palacios, 1995). In addition, Radloff (1977) found the CES-D had high positive correlations with scales of general psychopathology, negative correlation

with positive affect scales, and low correlations with variables unrelated to depression, such as use of medications and aggression.

Factor analysis of the CES-D has questioned the unidimensionality of the measure (Stansbury, Ried, & Velozo, 2006). In particular, Stansbury et al. (2006) discovered that removing the reverse-scored, positive affect items increased the unidimensionality and specificity of the CES-D. However, these authors suggested that the original 20-item scale has greater sensitivity and that further studies regarding validity of a shortened scale need to be done before using a version without the positive affect items. Advantages for using the CES-D over the BDI have been examined using item response theory (IRT). Using IRT methods with an adolescent sample, analyses by Olino et al. (2012) revealed that the CES-D may be more useful to measure depressive severity in a nonclinical sample due to the lower baseline level of depression. Research by Santor et al. (1995) also suggests that the CES-D total scores are more sensitive to increases in depressive severity than those of the BDI, but that using the CES-D cutoff scores for categorization of those with and without a diagnosis of depression would result in a high number of false positives compared to the BDI, particularly in a college sample. Given that the current study focused on depressive symptoms in a college population, as opposed to the presence or absence of depression in a clinical population, and given the demonstrated validity of the CES-D in college populations, the CES-D was administered in the present study. Internal reliability was high in this study (Cronbach's  $\alpha = .91$ ).

**Resilience.** As a research construct, resilience has been difficult to define and measure. Resilience has been viewed by different researchers as a personal trait, a process, or an outcome of adversity (Herrman et al., 2011; Windle, 2011). Some

operational definitions measure resilience as the lack of negative effects on a person's well-being following an adverse experience. Others measure resilience as a collection of traits, including biological, psychological, and social factors. Still others measure resilience as one's ability to thrive despite chronic, enduring negative risk factors. As Windle (2011) notes, there are multiple, interactive sources of resilience, including biological, psychological, dispositional attributes, and social support. In addition, both Herrman et al. (2011) and Windle (2011) highlight the importance of a developmental framework for resilience, in that resilience at one phase of life may look quite different from another phase of life. For the purposes of the current study, resilience was operationally defined and measured as a collection of various traits, primarily psychological and dispositional attributes, that have demonstrated association with reduced negative psychological outcomes following adversity. Social factors that might contribute to resilience (e.g., social support, socioeconomic status, family functioning) were separately defined and measured.

For the purposes of this study, participants completed the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003; see Appendix D), a 25-item self-report questionnaire that measures an individual's ability to cope with stress. Items are rated based on how the respondent has felt over the past month on a five-point Likert-type scale ranging from 0 (*not true at all*) to 4 (*true nearly all the time*). All item scores are summed for a total resilience score, ranging from 0 to 100, with higher scores indicating greater resilience. The scale's items draw from characteristics of resilience identified in previous research on resilience, such as hardiness, control, commitment, self-esteem, humor in the face of stress, adaptability to change, and faith. For example,



abbreviated item descriptions cited by the measure's authors include: "Can deal with whatever comes"; "Things happen for a reason"; and "In control of your life" (Connor & Davidson, 2003). Preliminary studies by the scale's authors revealed satisfactory internal consistency ( $\alpha = .89$ ) and test-retest reliability ( $r = .87$ ) when using samples from a variety of populations, including members of the general population, primary care outpatients, psychiatric outpatients, subjects of a general anxiety disorder (GAD) study, and participants in a clinical trial study for posttraumatic stress disorder (PTSD; Connor & Davidson, 2003). Cronbach's alpha in this study suggests high internal consistency ( $\alpha = .93$ ).

According to Connor and Davidson (2003), a five-factor structure was revealed through exploratory factor analysis (EFA). The five factors identified in this study were labeled by the authors as "personal competence, high standards, and tenacity," "trust in one's instincts, tolerance of negative affect, and strengthening effects of stress," "positive acceptance of change and secure relationships," "control," and "spiritual influences" (p.80). The multidimensional structure of the CD-RISC has been questioned by multiple researchers who have revealed different factor structures or unidimensional models (e.g., Burns & Anstey, 2010; Campbell-Sills & Stein, 2007; Karairmak, 2010). Using EFA and confirmatory factor analysis (CFA), Campbell-Sills and Stein (2007) found that narrowing the scale to thirteen items, a 2-factor model (hardiness and persistence) fit well. However, due to redundancy in the persistence items, these authors reduced the CD-RISC to a 10-item, 1-factor scale that correlated highly with the full version of the CD-RISC. The CD-RISC-10 is limited by the removal of potentially important features of resilience for purely statistical reasons, namely faith, social support, and self-efficacy

(Campbell-Sills & Stein, 2007). Given the conflicting results, the authors recommend using the CD-RISC as a unidimensional measure. These conflicting findings regarding the structure of the CD-RISC are reflective of the conflict within the literature regarding the definition of resilience.

Convergent validity for the CD-RISC has been established through expected correlations with related constructs. For example, Connor and Davidson (2003) found a strong positive correlation between the Kobasa hardiness scale and the CD-RISC ( $r = .83$ ), and negative correlations with the Perceived Stress Scale ( $r = -.76$ ) and the Sheehan Stress Vulnerability Scale ( $r = -.32$ ). Karairmak (2010) revealed strong positive correlations between the Turkish translation of the CD-RISC and measures of self-esteem ( $r = .53$ ), optimism ( $r = .55$ ), hope ( $r = .68$ ), and ego resilience ( $r = .68$ ). To ensure that the CD-RISC was not simply reflective of positive affect, Burns and Anstey (2010) reviewed item-level data comparing it to the Positive and Negative Affect Schedule (PANAS). These authors discovered that the CD-RISC was positively associated with positive affect ( $r = .58$ ) and negatively associated with negative affect ( $r = -.26$ ), but that resilience as measured by the CD-RISC was independent of affect.

Connor and Davidson (2003) also found that CD-RISC scores are sensitive to treatment gains in individuals with PTSD. The authors discovered that those individuals with PTSD who were responsive to pharmacological treatment reported increased resilience scores from pre- to post-test. Additionally, these increases in resilience were proportional to the subjects' overall clinical improvement. However, no increase in CD-RISC scores was seen in subjects who were not responsive to the pharmacological treatment.

**Family satisfaction.** Respondents' overall emotional satisfaction with their family of origin will be assessed using the Family Satisfaction Scale (Carver & Jones, 1992; see Appendix E). The Family Satisfaction Scale is a 19-item self-report questionnaire wherein participants indicate the degree to which they agree with statements about their families, such as: "I would do anything for a member of my family"; "I always felt my parents supported me"; and "There was too much conflict in my family." Items are rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*); items 6, 7, 9, 13, 14, 15, and 17 are reverse-scored so that higher scores represent greater emotional satisfaction with one's family.

The Family Satisfaction Scale demonstrated high internal consistency and item-whole correlations in evaluations of the psychometric qualities of the final scale with both college students ( $\alpha = .95$ ;  $r = .52-.87$ ) and adults ( $\alpha = .95$ ;  $r = .44-.87$ ). Test-retest reliability with 143 college students was satisfactory, with  $r = .88$  between two administrations over a two-month interval (Carver & Jones; 1992). Internal consistency was strong in this study (Cronbach's  $\alpha = .94$ ).

According to Carver and Jones (1992), initial development of the Family Satisfaction Scale began with 87 items assessing four domains: general satisfaction with family life; affection and acceptance; consistency and fairness; and family commitment. However, a principal components factor analysis revealed five factors using the 40 items most highly correlated with the total scale score in a pilot study with 131 college students, for which the first factor accounted for 52.4% of the variance. The authors determined there were no advantages to maintaining a multidimensional scale, and therefore reduced the scale to the current 19-item format.

The validity of the 19-item scale was evaluated through correlational studies with measures of various dimensions of family functioning such as task accomplishment, communication, affective expression, control, cohesion, and conflict. Strong relationships were revealed between the Family Satisfaction Scale and family cohesion, task acceptance, communication, and denial (inverse relationship). However, the Family Satisfaction Scale demonstrated unreliable correlations with adaptability, affective experience, organization, and control. As anticipated by the authors, the Family Satisfaction Scale was highly correlated with measures of the number of and satisfaction with social support in the family, and not significantly correlated with measures of shyness or sociability. As further evidence of the construct validity of the Family Satisfaction Scale, Carver and Jones (1992) cite correlational studies indicating that the scale was positively correlated with positive family characteristics (e.g., dependable, similar, satisfactory, reciprocal relationship), negatively correlated with negative family member characteristics (i.e., disagreements with, regret about, and betrayal by family members), and unrelated to structural family network characteristics (e.g., number of members in network).

Overall, the Family Satisfaction Scale possesses strong internal consistency, satisfactory temporal stability, and convergent and construct validity. It is a brief measure compared to other measures of family functioning, and is unaffected by individual differences in interpersonal dimensions (e.g., intimacy, cohesion, communication) because it approaches family functioning from the individual's satisfaction with the family of origin.

**Social support.** The six-item short form of the Social Support Questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987; see Appendix F) is a derivative of the full 27-item self-report Social Support Questionnaire (SSQ; Sarason, Levine, Basham & Sarason, 1983) that evaluates both the structural and perceptual dimensions of social support. Sample items include: “Whom can you really count on to distract you from your worries when you feel under stress” and “Whom can you really count on to support you in major decisions you make.” Each question consists of two parts: in one part the respondent lists the individuals in his/her life who provide the type of support delineated in the question, and in the other, the respondent rates his/her satisfaction with the support received. Satisfaction ratings are provided using a 6-point Likert-type response scale ranging from 1 (*very dissatisfied*) to 6 (*very satisfied*). The number score (SSQN) is calculated by adding up the total number of supportive individuals listed by the respondent and dividing this sum by the number of questions. Similarly, the satisfaction score (SSQS) is calculated by summing all satisfaction ratings and dividing this total by the number of items. The SSQN is considered to be a measure of structural social support because it reflects the average number of individuals within the respondent’s support network. The SSQS provides a measure of perceptual social support because it is dependent upon the respondent’s subjective perception of the adequacy of his/her support network (Chronister, Johnson, & Berven, 2006). Given this study’s interest in respondents’ perception of their social support network, only the satisfaction score (SSQS) was used as a measure of perceived social support.

To develop the SSQ, Sarason et al. (1983) administered an initial 61-item version of the SSQ to 602 undergraduate college students. Items reflected diverse situations in

which social support might be important. The researchers removed items that had low correlation to the other items, narrowing the item pool to 27 items. Factor analysis by the authors revealed one factor underlying both the number (N) and satisfaction (S) scores, accounting for 82% and 72% of the variance in these scores, respectively. The correlation between the N and S scores was  $r = .34$ , which suggests that N and S are representative of separate dimensions of the same general construct. Both the SSQN and the SSQS demonstrated high internal consistency, with alphas of .97 for N and .94 for S. Across samples, internal consistency reliability for the SSQ6 was comparable for both the number and satisfaction scores, with alphas ranging from .90 to .93 (Sarason et al., 1987). Good test-retest reliability was found by Sarason et al. (1983) for both dimensions of the full version SSQ (.90 for N; .83 for S) over a 4-week interval.

To evaluate convergent validity, Sarason et al. (1983) compared the SSQN and the SSQS to the Multiple Affect Adjective Check List (MAACL) scales of anxiety, depression, and hostility. The authors found that both the SSQN and the SSQS were significantly negatively correlated with all three of these scales, as anticipated. The SSQ scales were not, however, related to the Marlowe-Crowne measure of social desirability. Additionally, low social support as measured by the full version of the SSQ was related to external locus of control, difficult persistence on difficult tasks, dissatisfaction with life, and less adequate coping behavior under stress (Sarason et al., 1983).

Shortened versions of the SSQ are commonly used in research with ACOAs and mental health outcomes (e.g., Kashubeck, 1994; Lee & Williams, 2013; Williams & Corrigan, 1992). Sarason et al. (1987) recommend using the full version if administration time is not an issue. According to the authors, the full SSQ is a better option because

interpretation of the SSQ6 may be difficult due to ceiling effects and the resultant heterogeneity of variance. However, correlations between the SSQ6 and measures used to validate the SSQ (e.g., depression, anxiety, social desirability, loneliness, and social support) were not significantly different from the correlations of the SSQ with these measures. Given that the SSQ6 has been determined to be a psychometrically sound substitution for the SSQ, and given the need for brief measures, the current study used the satisfaction score (S) from the SSQ6 as a continuous measure of perceived social support. Internal consistency was high in this sample (Cronbach's  $\alpha = .92$ ). Ceiling effects were noted, and scores were transformed using a base ten log transformation. Statistical values presented in the results section, figures, and tables therefore have inverse signs from the actual directional relationships to other variables, such that signs should be reversed for interpretation.

**Parental mental illness.** Within the demographic questionnaire, participants were asked a series of questions to assess whether they perceived that one or both of their parents had a mental illness other than an alcohol use disorder (e.g., depression, anxiety, schizophrenia, bipolar disorder; see Appendix G). For each parent, respondents answered three questions rating how much they believed the parent had depression, anxiety, and other mental health disorders. Response options were coded on a Likert-type scale: 1 ("Definitely not"), 2 ("No, I don't think so"), 3 ("Not sure"), 4 ("Yes, I think so"), and 5 ("Yes, it was diagnosed"). Responses to these six questions were summed and then averaged across parents to yield a single score that reflected the degree to which both parents were believed to have mental illness; scores ranged from 1 to 5. Higher values

indicate higher likelihood that one or both parents of the respondent had a mental health disorder or symptoms of mental illness.

**Demographic questionnaire.** Participants completed a demographic questionnaire regarding information on age, gender, year in school, race, ethnicity, marital status, parents' marital status, family's income, and highest educational level attained by parents (see Appendix G). Additional items assessed gender of problem-drinking parent(s), and respondents' prior use of mental health services. Use of mental health services was divided into two questions regarding mental health treatment ("Have you ever received treatment from a mental health professional, such as a psychologist, psychiatrist, therapist, or counselor?") and mental health medication ("Have you ever been prescribed antidepressant or anti-anxiety medication?"). These questions were coded 1 ("Yes") or 0 ("No") for analyses.



## CHAPTER III

### RESULTS

#### **Data Preparation**

Prior to performing any analyses, data were checked for incomplete questionnaires, incorrect responses to validity questions, missing data points, skew and kurtosis, and univariate outliers. A total of 967 participants completed the full survey. Three validity questions were included in the survey to ensure that participants were carefully reading the questions. Participants who did not respond correctly to all three validity questions were removed from the dataset. This procedure resulted in 826 cases. Thirty five participants outside of the specified age range for emerging adulthood were removed, which resulted in a total of 791 participants. Finally, for purposes of interpretation, the only participant identifying as transgender was also removed from the dataset. This further reduced the sample to 790 participants.

Next, data were reviewed for missingness. Data were missing for one of two reasons. First, respondents may have skipped items. Second, participants could have selected not to answer a particular item. Missing data are considered for each of these occurrences.

Fifteen participants skipped one or more items on the survey. The number of items missed per participant ranged from one item (10 cases) to 23 items (one case). Fewer than 2% of participants skipped items. Given the few respondents who skipped items and the small number of items not answered, it was determined that analysis to determine any differences between participants who did and did not skip items would not have adequate power.

Participants were provided with the option to select “Prefer to not respond” for all questions in the study. Inspection of the data revealed that 25.2% of respondents selected this option on at least one question, with the number of refused items per participant ranging from one item (87 cases) to 45 items (one case). Approaches to the missing data attempted to maximize power while minimizing the introduction of bias. Categorical variables with cutoff scores (ACOA status and interpersonal trauma) were calculated using all available data per case. For example, participants who met the cutoff of six for ACOA status were categorized as ACOAs despite any missing CAST items. Individuals with CAST scores of zero and who refused to respond to only one CAST item were categorized as non-ACOA because their categorization would remain the same despite the missing item (i.e., scores of 0 or 1 are categorized as non-ACOA). Participants classified as indeterminate ACOAs (i.e., CAST raw scores of 2 to 5;  $N = 82$ ) were removed from the dataset and were not included in analyses, resulting in a reduction of the sample to  $N = 708$  participants.

Percentages of missing data were below 5% on all measures, with resilience (4.9%), interpersonal trauma (4%), depressive symptoms (4%), and family satisfaction (3.9%) having the highest percentages of missing data. Variables to be used in analyses were analyzed using the Missing Values Analysis option in SPSS (SPSS Inc., 2009). Little’s (1988) omnibus test was not statistically significant  $\chi^2(35, N = 699) = 41.97, p = .194$ , which indicates that the pattern of missing data appear to be missing completely at random (MCAR). Data that are MCAR are generally robust to model-based imputation methods such as multiple imputation (MI) and maximum likelihood estimation (ML; Schafer & Graham, 2002). However, given that the majority of the missing data was due

to refusal to respond, additional analyses were used to determine whether participants who refused to answer questions differed from those who did not refuse to answer any questions. Participants were categorized based on no refused items, one refused item, and two or more refused items. A univariate ANOVA using listwise deletion was run to examine possible differences among these three groups on the dependent variable, depressive symptoms. No significant differences were found,  $F(2, 679) = 1.41, p = .246$ , indicating that refusing to answer none, one, or two or more survey questions was not associated with depressive symptoms. Because there was no indication that the decision to refuse to answer questions was associated with the primary outcome variable (i.e., depressive symptoms), refusal to answer questions was not included in the estimation process and missing data were handled using the full information maximum likelihood estimation (FIML) function in Mplus Version 7 (Muthén & Muthén, 2012).

Demographic characteristics of the final sample of  $N = 708$  are listed in Table 1.

Path analysis using structural equation modeling (SEM) relies on the assumption of normality, or that the distribution of scores for a measure will be normal. However, Bentler and Chou (1987) looked at simulation evidence indicating that conclusions with non-normally distributed data should be reliable if using both fit indices and statistical criteria. Box plots were reviewed for skew and kurtosis as well as univariate outliers. Skew and kurtosis were found to be within an acceptable range for all variables except for the Social Support Questionnaire (SSQ6), which was negatively skewed and had multiple extreme outliers, reflecting that a large proportion of the respondents reported high satisfaction with their social support and very few respondents reported extremely

Table 1

*Demographic Information for Full Sample and Final Analytic Sample*

Variable	Full sample (N = 790)		Final sample (N = 708)	
	n (%)	Missing %	n (%)	Missing %
Gender		0		0
Male	243 (30.8)		217 (30.6)	
Female	547 (69.2)		491 (69.4)	
Age		0		0
18	146 (18.5)		130 (18.4)	
19	186 (23.5)		163 (23.0)	
20	157 (19.9)		147 (20.8)	
21	130 (16.5)		118 (16.7)	
22	90 (11.4)		80 (11.3)	
23	37 (4.7)		32 (4.5)	
24	27 (3.4)		24 (3.4)	
25	17 (2.2)		14 (2.0)	
Year		0		0
Freshman	258 (32.7)		225 (31.8)	
Sophomore	177 (22.4)		163 (23.0)	
Junior	195 (24.7)		180 (25.4)	
Senior	157 (19.9)		138 (19.5)	
Graduate Student	3 (0.4)		2 (0.3)	
Race		0		0
White/Caucasian	381 (48.2)		337 (47.6)	
Black/African-American	259 (32.8)		236 (33.3)	
Asian/Pacific Islander	48 (6.1)		42 (5.9)	
Latino/a	39 (4.9)		35 (4.9)	
Native American	3 (0.4)		3 (0.4)	
Multiracial	54 (6.8)		50 (7.1)	
Other	6 (0.8)		5 (0.7)	
Ethnicity		0		0
Hispanic	64 (8.1)		55 (7.8)	
Marital Status		0		0
Never married	613 (77.6)		557 (78.7)	
In a committed relationship	145 (18.4)		122 (17.2)	
Married	18 (2.3)		15 (2.1)	
Divorced	6 (0.8)		6 (0.8)	
Other	8 (1.0)		8 (1.1)	
Family Income		0		0
< \$25,000	89 (11.3)		84 (11.9)	
\$25,000 - \$50,000	205 (25.9)		181 (25.6)	
\$51,000 - \$75,000	212 (26.8)		188 (26.6)	
\$76,000 - \$100,000	140 (17.7)		125 (17.7)	
> \$100,000	144 (18.2)		130 (18.4)	

Table 1, Continued

Variable	Full sample ( <i>N</i> = 790)		Final sample ( <i>N</i> = 708)	
	<i>n</i> (%)	Missing %	<i>n</i> (%)	Missing %
<b>Highest Parental Education</b>		0		0
Did not finish high school	19 (2.7)		17 (2.4)	
High school graduate	119 (15.1)		107 (15.1)	
1+ years of college	152 (19.2)		136 (19.2)	
Associate degree	93 (11.8)		81 (11.4)	
Bachelor's degree	199 (25.2)		180 (25.4)	
Master's degree	167 (21.1)		149 (21.0)	
Professional degree	18 (2.3)		16 (2.3)	
Doctorate degree	23 (2.9)		22 (3.1)	
<b>Parental Marital Status</b>		0		0
Never married	101 (12.8)		91 (12.9)	
In a committed relationship	4 (0.5)		4 (0.6)	
Married	418 (52.9)		373 (52.7)	
Separated	35 (4.4)		34 (4.8)	
Divorced	210 (26.6)		184 (26.0)	
Unknown	5 (0.6)		5 (0.7)	
Other	17 (2.2)		17 (2.4)	
<b>Parental Drinking Problem</b>				
Mother	71 (9.0)	1.5	65 (9.2)	1.6
Still drinking	34 (47.9)	12.7	33 (50.8)	12.3
Father	153 (19.4)	3.9	127 (17.9)	3.8
Still drinking	76 (49.7)	7.2	68 (53.5)	7.1
<b>Previous MH treatment</b>		0.6		0.7
No	592 (74.9)		530 (74.9)	
Yes	193 (24.4)		173 (24.4)	
<b>Previous MH medication</b>		0.4		0.4
No	647 (81.9)		580 (81.9)	
Yes	140 (17.7)		125 (19.7)	
<b>ACOA Status</b>		1.1		1.3
Non-ACOA	514 (65.1)		514 (72.6)	
ACOA	185 (23.4)		185 (26.1)	
Indeterminate ACOA	82 (10.4)		-	
<b>Interpersonal Trauma</b>		4.4		4.0
No trauma	373 (47.2)		337 (47.6)	
Trauma	382 (48.4)		343 (48.4)	

Note. MH = mental health; ACOA = adult child of alcoholic.

low social support. A base ten log transformation was applied to this measure, which brought skew and kurtosis to acceptable levels and eliminated extreme univariate outliers.

Spearman rank correlations using pairwise deletion were run to evaluate the relationships between categorical demographic variables and depressive symptoms. Pearson product-moment correlations using pairwise deletion were run to evaluate the relationships between continuous demographic variables and depressive symptoms. The following variables have been identified as risk factors for depression in the literature and were examined as possible covariates: female gender, parental mental health problems other than alcohol abuse, parental divorce, divorced or separated marital status, and male gender of problem-drinking parent (Cuijpers et al., 1999; Williams & Corrigan, 1992). Although prior use of mental health services has not been controlled for in previous studies that have tested mediational models (Lee & Williams, 2013), it was examined as a possible covariate in the present study. Demographic factors that were significantly correlated with depressive symptoms were female gender ( $r_s = .13, p = .001, n = 679$ ), family income ( $r = -.09, p = .021, n = 679$ ), parental mental illness ( $r = .31, p < .001, n = 649$ ), previous mental health treatment ( $r_s = .21, p < .001, n = 675$ ), and previous antidepressant or anxiolytic medication prescription ( $r_s = .23, p < .001, n = 677$ ). Given that pairwise deletion excludes data from participants with missing data on the variables involved, this resulted in slightly varying  $n$  values for the correlation values. These variables were entered as covariates in the model. Parental divorce, participant marital status, and gender of problem-drinking parent were not significantly correlated with depressive symptoms, and were therefore not included as covariates in the model.

Intercorrelations among study variables are presented in Table 2. As anticipated, results demonstrated a significant positive correlation between ACOA status and depressive symptoms and a significant negative correlation between ACOA status and social support and family satisfaction. As predicted, there was no significant relationship between ACOA status and resilience. It was expected that trauma exposure would have a positive relationship with depressive symptoms and negative associations with social support and resilience. As expected, significant correlations were found between interpersonal trauma exposure and depressive symptoms, social support, and resilience. Contrary to expectations, however, results revealed a significant negative association between interpersonal trauma and family satisfaction. All mediators (social support, family satisfaction, and resilience) had a significant negative correlation with depressive symptoms, as anticipated. Descriptive statistics for categorical and continuous study variables are presented in Tables 1 and 3, respectively.

### **Power Analysis**

In order to evaluate the minimum sample size needed for a power level of .80, a commonly used estimate of adequate power (Cohen, 1992), a power analysis for the model was conducted using a calculator by Preacher and Coffman (2006). Based on guidelines from Kline (2011), the null root mean square error of approximation (RMSEA) entered was .08 and the alternative RMSEA entered was .05. Model degrees of freedom was based on the original model including all identified covariates ( $df = 19$ ). Based on these values and an alpha of .05, it was determined that the minimum sample size needed to detect these RMSEA values was 460. Given the final sample size of 708 participants, the sample size was deemed adequate to detect a significant effect.

Table 2

*Bivariate Correlations Between Study Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Depressive symptoms	-	.09*	.23***	-.47***	-.36***	-.26***	.32***	.13**	-.07	.21***	.23***
2. ACOA status	.09*	-	.24***	-.06	-.14***	-.16***	.31***	.05	-.10*	.06	.08*
3. Interpersonal trauma	.25***	.24***	-	-.08*	-.11**	-.26***	.32***	.19***	-.11**	.18***	.20***
4. Resilience	-.50***	-.05	-.09*	-	.38***	.26***	-.22***	-.05	.01	-.18***	-.16***
5. Social Support	-.37***	-.16***	-.11**	.40***	-	.34***	-.23***	.01	.01	-.12**	-.08*
6. Family Satisfaction	-.28***	-.16***	-.26***	.26***	.35***	-	-.43***	-.06	.16***	-.17***	-.15***
7. Parental Mental Illness	.31***	.31***	.32***	-.21***	-.21***	-.41***	-	.04	-.17***	.26***	.30***
8. Gender	.13**	.05	.19***	-.04	.01	-.07	.05	-	-.03	.09*	.08*
9. Family Income	-.09*	-.09*	-.11**	.02	.02	.14***	-.17***	-.03	-	.12**	.05
10. Previous MH treatment	.24***	.06	.18***	-.20***	-.13**	-.21***	.28***	.09*	.12**	-	.61***
11. Previous MH medication	.30***	.08*	.20***	-.20***	-.09*	-.20***	.32***	.08*	.04	.61***	-

*Note.* Pearson product-moment correlations below axis; Spearman's rank correlations above axis. MH = mental health.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



Table 3

*Descriptive Statistics for Continuous Study Variables*

Variable (Measure)	Mean	SD	Range	Cronbach's $\alpha$	Skew	Kurtosis	Missing %
Depressive symptoms (CES-D)	18.88	10.83	4 – 59	.91	1.20	1.18	4.01
Resilience (CD-RISC)	75.88	13.90	22 – 100	.93	-0.59	0.53	5.23
Family satisfaction (FSS)	75.68	13.83	27 – 95	.94	-0.80	0.22	3.95
Social support, pre-transformation (SSQS-6)	5.55	0.75	1 – 6	.92	-2.71	9.53	2.97
Log <sub>10</sub> Social support <sup>a</sup> (SSQS-6)	0.12	0.17	0 – 0.78	.92	1.40	1.48	2.97
Parental mental illness	2.27	0.88	1 – 4.67	-	0.22	-0.82	4.94

*Note.*  $N = 708$ . CES-D = Center for Epidemiologic Studies Depression Scale; CD-RISC = Connor Davidson Resilience Schedule; FSS = Family Satisfaction Scale; SSQS-6 = Social Support Questionnaire, short form, satisfaction subscale.

<sup>a</sup>Social support measure was inversely transformed using a base ten log transformation.

## Model Specification

Structural equation modeling (SEM) was used to examine the effects of ACOA status and interpersonal trauma exposure on depressive symptoms via family satisfaction, social support, and resilience, as depicted in the proposed theoretical model (Figure 1). Analyses were performed using Mplus Version 7 (Muthén & Muthén, 2012). Based on Hu and Bentler's (1999) recommendation of reporting a combination of fit indices, the chi-square goodness of fit statistic ( $\chi^2$ ), comparative fit index (CFI), Tucker-Lewis Index (TLI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) were used to evaluate model fit. The criteria for a well-fitting model were the CFI and/or TLI  $\geq .95$ , RMSEA  $< .08$  with a 90% confidence interval, and SRMR  $\leq .08$  (Hu & Bentler, 1999). The chi-square goodness-of-fit statistic ( $\chi^2$ ) is reported as suggested by Kline (2011); however, it is highly sensitive to sample size and frequently does not reach nonsignificance in larger samples, especially those over 200 (Hoe, 2008). For this reason, regardless of other model fit indices, the chi-square goodness-of-fit statistic was expected to be significant.

Leverage and influence outliers for each model were identified by saving the values of Mahalanobis distance and Cook's D for each model and comparing each case's value to rule of thumb cutoffs. Cutoff values for Mahalanobis distance were calculated using the critical chi-square with  $\alpha = .001$  and  $p$  (number of predictors; Aguinis, Gottfredson, & Joo, 2013). The cutoff value used for Cook's D was 1.0 (Cohen, Cohen, West, & Aiken, 2003). Model fit was then reviewed by dropping each outlying case one by one, and then again, without all of these outlying cases. As suggested by Aguinis et al. (2013), model fit statistics are reported for the hypothesized model and final model

both with and without outliers in an effort to provide transparency for the reader.

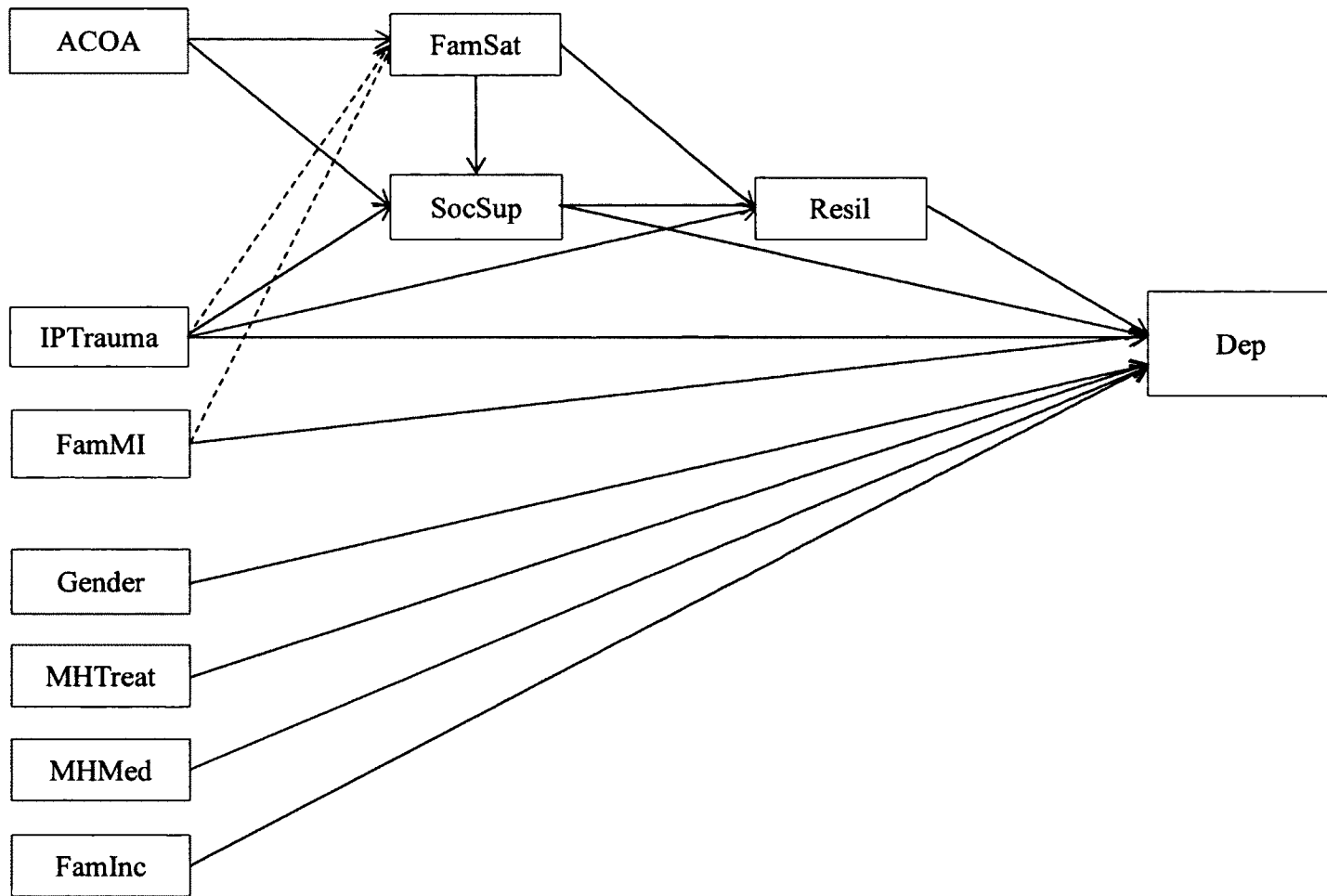
Outlying cases were left in each model as they were not found to be error outliers, and these individuals were a part of the population of interest. In order to reduce the effect of outliers and any possible multivariate non-normality in the data, non-parametric bootstrapping procedures using bias-corrected confidence intervals (CIs) at 95% based on 5,000 bootstrap samples with replacement were used to estimate unstandardized path coefficients, standard errors, and indirect effects (Efron & Tibshirani, 1993).

The first model (see Figure 1), representing the hypothesized model without the introduction of covariates, demonstrated poor model fit,  $\chi^2(4, N = 708) = 42.396, p < .001$ . Fit indices suggested that the theoretical model provided an inadequate fit to the data, CFI = .927, TLI = .744, RMSEA = .116 with 90% CI [.086, .149], and SRMR = .052. Four leverage outliers were identified using Mahalanobis distance cutoff values; no influence outliers were identified. Goodness-of-fit and fit indices were largely unchanged by the removal of these four outliers,  $\chi^2(4, N = 704) = 41.937, p < .001$ , CFI = .928, TLI = .747, RMSEA = .116 with 90% CI [.086, .149], and SRMR = .052. Adding the covariates of parental mental illness, gender, family income, prior mental health treatment, and prior mental health medications to the model inclusive of the outliers, the model fit deteriorated,  $\chi^2(19, N = 708) = 168.402, p < .001$ , CFI = .779, TLI = .605, RMSEA = .105 with 90% CI [.091, .120], and SRMR = .081.

Based on theory and review of Pearson correlations and modification indices, two new paths were added to the model. The first path was from interpersonal trauma to family satisfaction. Upon closer analysis of the traumatic events experienced by those reporting at least one type of interpersonal trauma, the three most commonly endorsed

traumatic events involved witnessing family violence (46.1% of those endorsing trauma), having one's life or physical well-being threatened (25.1%), and experiencing injurious punishment as a child (i.e., punishment resulting in burns, bruises, cuts, or broken bones; 21.6%). The path from interpersonal trauma to family satisfaction is consistent with research that demonstrates that as the amount of interparental violence increases, parents' ratings of family strengths such as trust, loyalty, and problem-solving decrease. Thus, interparental violence appears to damage family relationships (Meredith, Abbott, & Adams, 1986). In addition, Martin et al. (1987) found a positive association between parental violence and adolescent offspring's anger toward parents. Furthermore, Martin et al. found a negative association between parental violence and satisfaction with the family.

A second path was added to the model from parental mental illness to family satisfaction. This relationship is consistent with research that demonstrates that families with maternal mental illness (i.e., depression, anxiety, bipolar disorder, and additional disorders) exhibit less healthy family-unit functioning than families without maternal mental illness (Dickstein et al., 1998). Additionally, research has shown that maternal depression is associated with less family adaptability and cohesion, more disorganized planning, unclear allocation of responsibilities, increased family conflict, and reduced quality of interaction with children (Billings & Moos, 1983; Dickstein et al., 1998). Research on mental illness in fathers or both parents is less prevalent, but has shown lower family cohesion, poorer marital adjustment, and more affectionless control are reported among families with depression in one or both parents (Nomura, Wickramaratne, Warner, Mufson, & Weissman, 2002), and that maternal overprotection



*Figure 2.* Model 2 with covariates included and two additional paths. New paths are represented by dashed lines. ACOA = ACOA status, IPTrauma = interpersonal trauma exposure, FamMI = parental mental illness, FamSat = family satisfaction, SocSup = social support, Resil = resilience, Dep = depressive symptoms, MHTreat = prior mental health treatment, MHMed = prior mental health medications, FamInc = family income.

is associated with negative mental health outcomes in children of depressed parents (Lewandowski et al., 2014). In retrospect, it appears that participants who report parental mental illness would be likely to also report lower family satisfaction than participants not reporting parental mental illness.

As presented in Figure 2, Model 2 demonstrated adequate model fit,  $\chi^2(17, N = 708) = 47.496, p < .001, CFI = .955, TLI = .911, RMSEA = .050$  with 90% CI [.033, .067], and SRMR = .038. However, several hypothesized paths were not significant in the models presented. Interpersonal trauma did not have a significant effect on resilience or social support in the hypothesized or the revised model. Additionally, after adding parental mental illness into the model and accounting for the relationship between interpersonal trauma and family satisfaction, ACOA status no longer had a significant direct effect on family satisfaction. A more parsimonious model was created by removing these three non-significant effects. Model 3 (see Figure 3) represents the final model, which demonstrated good fit,  $\chi^2(20, N = 708) = 47.580, p < .001, CFI = .959, TLI = .931, RMSEA = .044$  with 90% CI [.028, .060], and SRMR = .039. Four leverage outliers and no influence outliers were identified for this model. Model fit was slightly improved after removing all outliers,  $\chi^2(20, N = 704) = 41.815, p = .003, CFI = .966, TLI = .943, RMSEA = .039$  with 90% CI [.022, .056], and SRMR = .034.

The final model accounted for the following proportion of variance in the endogenous variables: depressive symptoms,  $R^2 = .35$ ; resilience,  $R^2 = .19$ ; family satisfaction,  $R^2 = .19$ ; and social support,  $R^2 = .14$ . All path coefficients and bias-corrected confidence intervals for Model 3 are presented in Table 4.

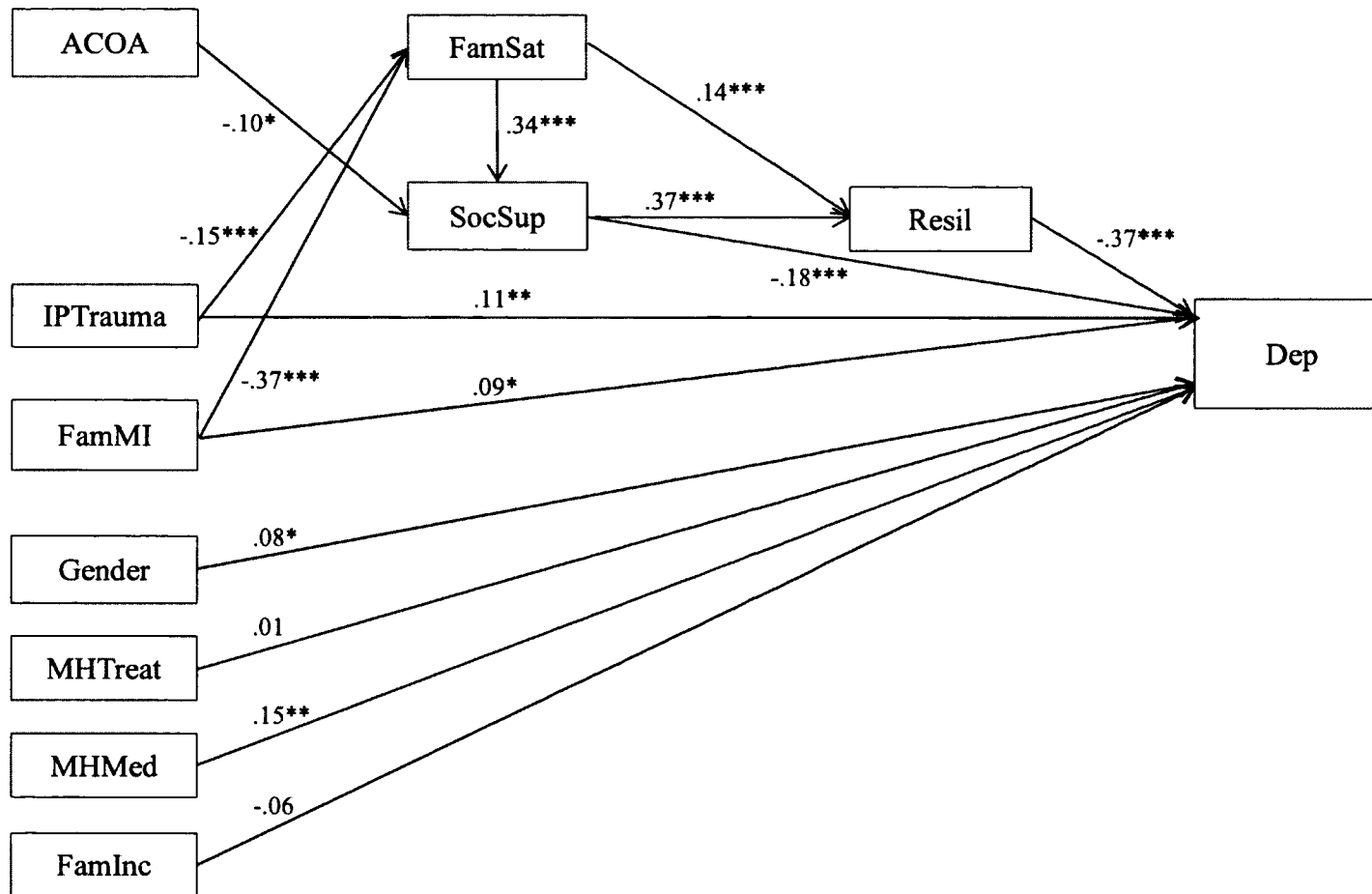


Figure 3. Final model with standardized path coefficients. Constrained paths have been removed. ACOA = ACOA status, IPTrauma = interpersonal trauma exposure, FamMI = parental mental illness, FamSat = family satisfaction, SocSup = social support, Resil = resilience, Dep = depressive symptoms, MHTreat = prior mental health treatment, MHMed = prior mental health medications, FamInc = family income.

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

Table 4

*Maximum Likelihood Estimates for Direct and Indirect Effects of Final Model*

Path	$\beta$	<i>B</i>	<i>SE</i>	95% CI [ <i>LL</i> , <i>UL</i> ]
<b>Direct Effects</b>				
Resil → Dep	-.37	-0.28	0.03	[-0.34, -0.23]*
SocSup → Dep	-.18	-11.41	2.50	[-6.51, -16.31]*
IPTrauma → Dep	.11	2.42	0.73	[0.98, 3.83]*
FamMI → Dep	.09	1.12	0.52	[0.07, 2.14]*
Gender → Dep	.08	1.93	0.71	[0.52, 3.27]*
FamInc → Dep	-.06	-0.47	0.27	[-0.99, 0.05]
MHTx → Dep	.01	0.14	1.06	[-1.93, 2.24]
MHMed → Dep	.15	4.25	1.27	[1.80, 6.84]*
SocSup → Resil	.37	30.60	3.54	[37.67, 23.91]*
FamSat → Resil	.14	0.14	0.04	[0.06, 0.22]*
FamSat → SocSup	.34	0.004	0.000	[0.005, 0.003]*
ACOA → SocSup	-.10	-0.04	0.02	[-0.01, -0.07]*
IPTrauma → FamSat	-.15	-4.11	1.03	[-6.10, -2.07]*
FamMI → FamSat	-.37	-5.83	0.63	[-7.06, -4.59]*
<b>Indirect Effects</b>				
ACOA → SocSup → Resil → Dep	.01	0.32	0.14	[0.07, 0.62]*
ACOA → SocSup → Dep	.02	0.41	0.20	[0.08, 0.89]*
IPTrauma → FamSat → SocSup → Resil → Dep	.01	0.15	0.05	[0.07, 0.26]*
IPTrauma → FamSat → Resil → Dep	.01	0.16	0.07	[0.06, 0.32]*
IPTrauma → FamSat → SocSup → Dep	.01	0.19	0.07	[0.09, 0.38]*
FamMH → FamSat → SocSup → Resil → Dep	.02	0.23	0.08	[0.09, 0.39]*
FamMH → FamSat → Resil → Dep	.02	0.27	0.08	[0.15, 0.46]*
FamMH → FamSat → SocSup → Dep	.02	0.21	0.05	[0.13, 0.33]*

*Note.* CI = confidence interval; *LL* = lower limit; *UL* = upper limit; ACOA = ACOA status; IPTrauma = interpersonal trauma exposure; FamMH = parental mental illness; FamSat = family satisfaction; SocSup = social support; Resil = resilience; Dep = depressive symptoms; MHTreat = prior mental health treatment; MHMed = prior mental health medications; FamInc = family income.

\*significant 95% confidence interval.



As shown in Table 4, significant specific indirect effects suggest that family satisfaction, social support, and resilience significantly mediated the relationships between ACOA status and depressive symptoms and between interpersonal trauma exposure and depressive symptoms. Specifically, the relationship between ACOA status and depressive symptoms was mediated by social support such that ACOAs were likely to report lower social support and higher depressive symptoms. An additional mediational pathway suggests that lower social support is associated with reduced resilience, which is in turn related to increased depressive symptoms. Results suggest that the relationship between interpersonal trauma exposure and depressive symptoms was mediated by family satisfaction, social support, and resilience. Specifically, trauma exposure had a negative effect on family satisfaction. In turn, reduced family satisfaction was associated with reduced social support. Reduced social support had a negative effect on resilience, which then was associated with higher depressive symptoms. Social support also exhibited a direct negative relationship with depressive symptoms such that lower social support predicted higher depressive symptoms. Reduced family satisfaction also had a direct effect on reduced resilience, which was in turn associated with increased depressive symptoms.

## CHAPTER IV

### DISCUSSION

The present study expands upon previous research on ACOAs by incorporating additional theory-based background predictors and mediators into a predictive model using a college student sample. Results suggest that meeting criteria for being an ACOA is not associated with increased depressive symptoms after accounting for the effects of interpersonal trauma and parental mental illness. Although ACOA status had a direct effect on family satisfaction in the initial model, when the model was revised such that paths were added from interpersonal trauma to family satisfaction and from parental mental illness to family satisfaction, ACOA status did not have an effect on family satisfaction. The final model shows that ACOA status had a direct negative effect on social support. In turn, social support had a direct effect and indirect effect via resilience on depressive symptoms.

#### **Hypothesis 1**

It is was hypothesized that ACOA status would be positively correlated with depressive symptoms, but that when added to a model with interpersonal trauma and various mediators and covariates, ACOA status would no longer have an effect on depressive symptoms. Rather, the effect of ACOA status on depressive symptoms would be mediated by other variables in the model. This hypothesis was supported. As expected, meeting criteria for being an ACOA was weakly, yet significantly correlated with higher depressive symptoms. Furthermore, when entered into a model controlling for interpersonal trauma, ACOA status did not have a direct relationship with depressive symptoms. Rather, the relationship between parental alcoholism and depressive

symptoms was fully mediated by family satisfaction, social support, and resilience. This is not to say that ACOA status is not an important factor in depressive symptoms, but that other factors, often associated with being an ACOA, such as interpersonal trauma (e.g., Fox & Gilbert, 1994; Hall & Webster, 2007) and parental mental health issues (e.g., Sher, 1991) may be more important.

Although meeting criteria for parental alcoholism is associated with depressive symptoms, the family environments that parents with alcohol-related problems often create may result in significant risks. For example, one must remember that ACOAs are more likely than non-ACOA to experience traumatic experiences (Nicholas & Rasmussen, 2006), and that trauma is associated with depressive symptoms. Examining ACOA status alone and comparing ACOAs to non-ACOA may overestimate the effect that parental alcoholism has on depressive symptoms. This finding highlights the importance of not treating ACOAs as a homogenous group and parsing out whether an ACOA has experienced trauma.

Research regarding the predictive value of ACOA status on depression or depressive symptoms in a college population has been unclear. This study contributes valuable information that supports previous research that has found traumatic experiences such as childhood abuse, physical abuse, and childhood trauma may have stronger associations with depressive symptoms than ACOA status. Furthermore, when other factors such as exposure to interparental violence, child physical abuse, and parental mental illness are considered, individuals who meet criteria for parental alcoholism may not have higher risk of depressive symptoms than non-ACOA who have not experienced trauma and other stressful life events (Harter & Taylor, 2000; Fox & Gilbert, 1994;

Harter & Vanacek, 2000). Contrary to the findings in the current study, Lee and Williams (2013) found that domestic violence was highly associated with parental alcoholism, but that family violence did not significantly predict depressive symptoms among ACOAs. Conflicting results regarding the influence of trauma on depressive symptoms in ACOAs may be due to inconsistent methods of evaluating trauma and different definitions of trauma used in the ACOA literature. For example, Lee and Williams (2013) defined trauma as the number of experiences with domestic violence during childhood (i.e., being a victim or witness of physical, emotional, verbal, and sexual violence within the family), whereas other researchers have looked specifically at childhood sexual abuse (Yama et al., 1992), childhood sexual, physical, and emotional abuse (Harter & Taylor, 2000), or physical abuse (Fox & Gilbert, 1994). The measure of interpersonal trauma employed in the present study included a broad range of common traumas and assessed interpersonal traumatic experiences of which the participant was a victim (e.g., sexual and physical abuse, assault, threats of death) as well as the experience of witnessing family violence. Theoretically, these types of traumatic events are likely to have the greatest effect on depressive symptoms and also to be the most commonly experienced traumatic experiences by ACOAs (Ford, Elhai, Connor, & Frueh, 2010; Kilpatrick et al., 2003).

## **Hypothesis 2**

ACOA status and interpersonal trauma were expected to be negatively correlated with social support. ACOA status was expected to be negatively related to family satisfaction, whereas interpersonal trauma exposure was expected to be associated with reduced resilience. These hypotheses were partially supported. Initial correlations

indicated that, as expected, ACOA status and interpersonal trauma were significantly related to social support, such that presence of parental alcoholism and interpersonal trauma were associated with reduced social support. In addition, the correlations reflected a negative association of interpersonal trauma with resilience, whereas ACOA status was not related to resilience.

An unexpected finding was that both ACOA status and interpersonal trauma were associated with reduced family satisfaction, with interpersonal trauma exposure having a stronger relationship to family satisfaction than ACOA status. The significant relationship between interpersonal trauma and family satisfaction is contrary to the hypothesized relationship, but is understandable when considering the percentage of participants with interpersonal trauma who reported witnessing family violence and experiencing harmful punishment as children. That is, nearly half of respondents who endorsed exposure to interpersonal trauma reported witnessing family violence and over one-fifth had experienced punishment resulting in burns, bruises, cuts, or broken bones. The negative effect of interpersonal trauma exposure on family satisfaction is consistent with research that supports an association between parental violence and increased parent-child violence and reduced family functioning (Meredith, Abbott, & Adams, 1986). Additionally, research has shown that parental violence is associated with increased anger and decreased family satisfaction in adolescents (Martin et al., 1987). The current findings suggest that exposure to a variety of forms of interpersonal trauma, including parental violence, is associated with reduced family satisfaction in emerging adulthood as well as adolescence.

### **Hypothesis 3**

It was hypothesized that the relationship between parental alcoholism and depressive symptoms would be mediated through family satisfaction, social support, and resilience. Results showed that once ACOA status was entered into a model with interpersonal trauma and family mental illness, the relationship between ACOA status and family satisfaction was no longer significant, suggesting that having an alcoholic parent does not necessarily reduce one's family satisfaction without the presence of other often-related family events. This supports research that has shown robust relationships between parental alcoholism and family dysfunction (Nicholas & Rasmussen, 2006). For example, Dube et al. (2001) found that the presence of an alcoholic parent at least doubled the risk of each adverse childhood event measured (e.g., physical or sexual abuse, neglect, interparental violence, parental mental illness, parental substance abuse). The results of their study demonstrated that participants reporting maternal, paternal, or bi-parental alcohol abuse were five to 12 times more likely to report domestic abuse directed at the mother and two to six times more likely to report parental mental illness than those reporting no parental alcoholism. Thus, the model demonstrated that reduced family satisfaction likely results from the exposure to interpersonal trauma and/or the presence of mental illness within the family, which are highly associated with parental alcoholism.

The final model from the current study does not support family satisfaction as a mediator within the relationship between ACOA status and depressive symptoms. However, the model did support the hypothesis that ACOA status has an indirect effect on depressive symptoms through reduced social support, and through the subsequent

reduction in resilience associated with reduced social support. These findings help to clarify conflicting research results regarding the relationship between ACOA status and social support within a college population. This study provides support for research that has indicated reduced social support from family members and peers (Sher, 1991), and reduced positive relationships with family members and peers (Kelley et al., 2010). Moreover, Kashubeck and Christensen (1992) found that ACOAs who were part of support group meetings reported lower social support than college-attending ACOAs. As a large percentage of the support group ACOAs had attended or were attending college (82%), the results suggest that reduced perceived social support may continue to be a problem for ACOAs after college. The present study also replicates results found by Lee and Williams (2013) that provided support for a mediational pathway from parental alcoholism to depressive symptoms through social support and resilience.

However, the present study's findings conflict with those of Kashubeck (1994) and Wright and Heppner (1993), who found no association between parental alcoholism and social support. Furthermore, Kashubeck found no mediating effect of social support between parental alcoholism and distress. One advantage of the present study is the comparatively large sample size in this study, which provided ample power to detect a significant relationship between social support and parental alcoholism and a mediating effect. Whereas Kashubeck and Wright and Heppner had analytic samples of 62 and 40 ACOAs, respectively, the current study utilized a sample of 185 ACOAs. As previously mentioned, it is possible that the relationship between ACOA status and social support in college-attending ACOAs is not as strong as might be anticipated for non-college-attending ACOAs because those ACOAs who attend college may have had supportive

individuals who have encouraged them to pursue educational and other goals. Research into the relationship between parental alcoholism and social support in college-attending versus non-college-attending ACOAs may help to determine whether this effect is stronger in a non-college population.

#### **Hypothesis 4**

The final specified model supported the hypothesis that interpersonal trauma would have a direct effect on depressive symptoms even with the addition of pertinent control variables. Although the size of the effect was small, a direct effect between interpersonal trauma and depressive symptoms was significant within the final model. This finding contributes to a rich literature base that supports the association of negative mental health outcomes and the experience of trauma, as has been noted in many studies (Chapman et al., 2004; Felitti et al., 1998; Kendler, Kessler, Neale, Heath, & Eaves, 1993; Kendler, Neale, Kessler, Heath, & Eaves, 1993). It is important to note that previous research has demonstrated that the association between interpersonal trauma and depressive symptoms may result from neurobiological factors involving the neuroendocrine system, which may underlie the link between childhood trauma and depression (Heim & Nemeroff, 2001; Heim, Newport, Mletzko, Miller, & Nemeroff, 2008).

The final model also demonstrates complex findings between interpersonal trauma, family satisfaction, social support, resilience, and depressive symptoms. Although this relationship was not hypothesized, interpersonal trauma had a negative association with family satisfaction. First, although not specified in the original model, the final model revealed that family satisfaction mediated the association between



interpersonal trauma and social support such that individuals who experience interpersonal trauma may be more likely to report lower satisfaction with their social support system if they also report reduced family satisfaction. In retrospect, a reasonable assumption may be that individuals with certain types of interpersonal trauma were victims or witnesses of violence within the home, and were therefore dissatisfied with their family life and feel unable to rely on family members for social support. An alternative explanation could be found in attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1979), which would suggest that children in families with interpersonal violence or abuse develop insecure attachment styles. Work by Mallinckrodt (2000) has found that individuals with insecure attachment are more likely to have reduced social competency and are therefore less effective at generating satisfying social support networks. The current study's finding that family satisfaction mediates the relationship between interpersonal trauma and social support corresponds to this theory in that individuals who experienced family-related interpersonal trauma would be at a disadvantage for developing strong social support networks.

Additionally, the finding that family satisfaction mediates the relationship between interpersonal trauma and social support, resilience, and depressive symptoms, supports the emotional security theory (EST) posited by Davies and Cummings (1994). EST suggests that children exposed to interparental violence are likely to experience chronic emotional arousal and to have difficulty regulating their emotional responses. Furthermore, these children may feel emotionally insecure and may develop maladaptive coping mechanisms, such as internalizing sadness or externalizing anger (Davies & Cummings, 1994). Children who are unable to cope with their emotions would therefore

be less likely to garner positive social support or to cope with challenging situations (i.e., be resilient).

The initial model hypothesized that interpersonal trauma and resilience would be directly related and that resilience would mediate the relationship between interpersonal trauma and depressive symptoms. These hypothesized paths were partially supported by the final model. Although a weak correlation between interpersonal trauma and resilience was found, once included in the full model, the association between interpersonal trauma and resilience was no longer significant. Rather, the relationship between interpersonal trauma and resilience was mediated by family satisfaction and social support

However, the relationship between interpersonal trauma and depressive symptoms was mediated by the pathway through family satisfaction, social support, and resilience, as expected. Thus, interpersonal trauma exposure was associated with reduced family satisfaction, which in turn was associated with reduced social support. Reduced social support was then associated with reduced resilience, which was subsequently associated with higher depressive symptoms.

In retrospect, interpersonal trauma may not be directly related to resilience due to the enduring nature of resilience compared to the situational nature of trauma. In a review of research on resilience and trauma, Agaibi and Wilson (2005) note that resilience is often conceptualized as an enduring characteristic that is developed through early life experiences and positive family support or social support and modeling. Considering that traumatic events are multidimensional and may occur at any time in one's development, a direct relationship between an enduring characteristic, such as

resilience, and a situational factor, such as exposure to trauma will likely be nonexistent or weak. However, the relationship between interpersonal trauma and resilience may be mediated by family satisfaction because those with family-related interpersonal trauma, such as witnessing family violence, may not have appropriate models or support to develop coping skills consistent with resilience. Similarly, the strong negative relationship found between suspected parental mental illness and resilience, with higher parental mental illness associated with lower resilience, may support the developmental theory of resilience in that children of parents with mental illness are also less likely to have positive models of resilience and to learn valuable coping abilities at a young age.

Overall, the final model suggests that, as anticipated, the relationships between ACOA status and exposure to interpersonal trauma on depressive symptoms are mediated by family satisfaction, social support, and resilience in different ways. ACOA status was hypothesized to have an indirect effect on depressive symptoms through family satisfaction and social support. However, the final model revealed that when interpersonal trauma and parental mental illness were added to the model, ACOA status did not have a direct effect on family satisfaction. These results suggest that aspects of the family context (e.g., exposure to parental violence), parental behavior (i.e., harsh parenting or child physical abuse), and parental functioning (i.e., parental mental illness) may be important components that underlie the risk for depression for ACOAs. Although these factors appear to create risk for ACOAs and non-ACOAs, trauma exposure and parental mental illness were correlated with ACOAs status. Thus, these experiences may be more common among ACOAs than non-ACOAs. Because previous research has often examined ACOAs versus non-ACOAs without examining these important experiences,

differences due to the family environment, parents' mental health, and parenting behavior may have been masked, that is, believed to be a function of parental alcohol abuse only.

The present study elucidates the importance of factors such as family violence, injurious punishment, and parental mental illness that may be more common among ACOAs.

### **Clinical Implications**

Conceptual models such as the model in Figure 3 allow for the understanding of factors that may lead to the development of negative mental health outcomes given certain background characteristics. This understanding makes it possible to develop or select clinical intervention approaches that target key variables for use with a specific population. The results of this study support the theory that ACOAs are not as homogenous of a group as some previous research has suggested. However, the limitations of previous research may be due in part to not assessing other factors that may mediate or moderate the effects of ACOA status on depressive symptoms. Specifically, the findings of this study highlight the important role that family and situational factors, such as parental mental illness, family violence, and physical and sexual abuse or assault, likely have in the development of depressive symptoms for ACOAs as well as non-ACOAs.

The model suggests that the strongest, most proximal predictor of depressive symptoms for both ACOAs and individuals with a history of interpersonal trauma is resilience. Resilience may be a difficult factor to target in clinical interventions with an emerging adult population, given its tendency to be tied to early developmental experiences (Agaibi & Wilson, 2005). However, the model suggests that social support plays an important mediating role on resilience. Interpersonal therapy approaches that

have been empirically shown to benefit individuals with depression, such as interpersonal psychotherapy (IPT; Klerman, Weissman, Rounsaville, & Chevron, 1984; Weissman & Markowitz, 1994; Weissman, Markowitz, & Klerman, 2000) may be useful intervention tools for both ACOAs and college students with a history of interpersonal trauma. Goals of IPT are to help the client understand his or her patterns in interpersonal relationships and to learn how to resolve interpersonal conflicts and to form healthy relationships with others (Frank & Levenson, 2011). These techniques have been demonstrated to reduce depressive symptoms through improving the client's interpersonal relationships, thereby increasing the client's social support network, and enabling the client to increase the likelihood that his/her needs are met in relationships (Klerman et al., 1984; Weissman & Markowitz, 1994; Weissman et al., 2000). This type of intervention may be of benefit to ACOAs with or without interpersonal trauma experiences in attaining the social support they need and increasing their satisfaction with social support.

The model additionally suggests that negative family factors may not play a role in depressive symptoms for all ACOAs. For many college students, attending college is a time of increasing independence and exploration of their families' patterns and how their lives have been affected by their families. This time of emerging adulthood (Arnett, 2000) is a common time for family dissatisfaction and negative mental health outcomes to emerge. Because of the availability of college counseling centers during this time period, it may be helpful for counselors to assess for family mental illness and interpersonal trauma in order to determine whether to focus treatment on family factors and resolving questions about or accepting the difficult parts of one's family experience.

## **Limitations**

This study was limited by its correlational and cross-sectional approach and the use of only self-report measures administered online. Causal inferences cannot be made without the use of a longitudinal design, so it is not possible to assume from this model that any of the variables directly or indirectly cause any other variables. It is possible that individuals with higher depressive symptoms are more likely to experience interpersonal trauma rather than vice versa, or that individuals with lower resilience are more likely to report low satisfaction with their families. Although participants were informed that their responses were anonymous, the use of self-report measures renders the results susceptible to bias due to refusal to respond to sensitive questions and social desirability.

Although the majority of the measures used have demonstrated good reliability and validity, the results of the current study may be limited by the social support and family mental illness measures used. The shortened, 6-item form of the Social Support Questionnaire (SSQ-6) was used to reduce the time burden on participants. As previously mentioned, the SSQ-6 is susceptible to ceiling effects, which was evident in this sample. Although a base ten log transformation resulted in acceptable skew and kurtosis values, this rendered the results difficult to interpret and was not ideal for this population. Additionally, the measure used for family mental illness was not a validated measure. Parental mental illness was examined as an exploratory factor, and due to limitations in existing measures of assessing offspring's reports of parental mental illness (e.g., the length of the measures), rather than a well-validated measure of parental mental illness, only a few items were administered. Despite this limitation, the questions used to measure family mental illness correlated with other measures in expected directions and

demonstrated effects consistent with previous theoretical findings (e.g., Billings & Moos, 1983; Dickstein et al., 1998).

Although a well-fitting model was found based on the theory presented in this study, a limitation of this study is that only one theoretical model was presented and reviewed. One of the primary limitations of structural equation modeling is that there may be many equivalent models or non-equivalent but equally well-fitting alternative models for the data (Tomarken & Waller, 2003). For example, alternative models may look at non-recursive pathways between variables or relationships between error variances that this model did not review.

An additional limitation of SEM that may apply to this study is that of omitted variables. Tomarken and Waller (2003) note that even perfectly fitting models may be limited by the omission of key variables that could affect parameter estimates and standard errors. Although this study attempted to control for key variables within the specified model, such as parental mental illness, gender, family income, and previous mental health treatment and medication, there are likely additional variables that were not considered or measured that may affect the goodness-of-fit of the model presented.

Finally, it is important to note that the measurement of depressive symptoms in this study provided only a snapshot of symptoms during the previous week. Similar to ACOA status, individuals with depression or depressive symptoms are a heterogeneous group. Depressive symptoms may be chronic or periodic, mild to severe, so some participants who would meet a diagnosis for a depressive mood disorder may not have been detected using the CES-D. Additionally, some individuals who would not meet full diagnostic criteria for a mood disorder may have endorsed a high number of depressive

symptoms during the past week, which limits the generalizability of the results. It cannot be assumed from the results that participants endorsing high depressive symptoms would meet criteria for a Major Depressive Episode or any other single psychological disorder.

### **Future Directions**

It would be helpful to replicate the findings of this study using a longitudinal design, interview measure rather than self-report to differentiate mood disorders, the full length version of the Social Support Questionnaire (SSQ), and a more commonly used and validated measure of parental mental illness. Following participants from childhood to adolescence and emerging adulthood would provide more substantial information regarding the development, directionality and potential causality of factors that cannot be assumed from the current, cross-sectional correlational study. Extensions of this study could involve developing an alternative theory-based model using these variables and comparing these two models. Additionally, theory may suggest additional paths between this study's variables or error variances that would help to improve model fit.

Research into clinical applications of this model may help to clarify the utility of the results of this study. For example, applying interpersonal approaches with ACOAs who present with depressive symptoms and comparing this to other empirically-supported therapies for depression would allow for real-world application of these results. Comparison of effectiveness of interpersonal approaches for ACOAs with and without interpersonal trauma and/or family mental illness may also be a useful practical extension of this research.



## CHAPTER V

### CONCLUSION

Previous researchers have questioned the utility and accuracy of looking at ACOAs as a homogenous population as it pertains to negative outcomes related to being an ACOA (Harter, 2000; Johnson et al., 1991; Sher, 1991). Findings regarding the effects of parental alcoholism on mental health have been contradictory (Fox & Gilbert, 1994; Hall & Webster, 2002; Harter, 2000; Johnson, Sher, & Rolf, 1991; Kelley et al., 2010; Klostermann et al., 2011; Sher, 1991), especially within college student populations. Trauma exposure and family variables, such as violence within the family and parental mental illness, have been suggested as salient factors in the heterogeneity of ACOAs' negative mental health outcomes (e.g., Fox & Gilbert, 1994; Harter & Taylor, 2000; Williams and Corrigan, 1992; Yama et al., 1992). The aims of this study were to examine the relationship of ACOA status and interpersonal trauma exposure to the presence of depressive symptoms within a theory-specified model including the mediators of family satisfaction, social support, and resilience.

Although several limitations have been noted, the study provides support for many of the initial hypotheses while extending previous findings regarding ACOAs and depression. More specifically, results suggest that the relationship between ACOA status and depressive symptoms for college-attending ACOAs may vary depending on trauma and family variables, especially interpersonal trauma exposure and parental mental illness, and that family satisfaction may play an important role in the mediation of depressive symptoms among those who had experienced interpersonal trauma or parental mental illness. On the other hand, results suggest that college-attending ACOAs are

likely to report reduced social support regardless of interpersonal trauma exposure, and may therefore benefit from clinical interventions that aim to increase social support.

## REFERENCES

- Agaibi, C. E. & Wilson, J. P. (2005). Trauma, PTSD, and resilience: A review of the literature. *Trauma Violence & Abuse, 6*, 195-216. doi: 10.1177/1524838005277438
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-practice recommendations for defining, identifying, and handling outliers. *Organizational Research Methods, 16*, 270-301. doi: 10.1177/1094428112470848
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480. doi: 10.1037//0003-066X.55.5.469
- Bentler, P. M., & Chou, C. (1987). Practical issues in structural modeling. *Sociological Methods & Research, 16*, 78-117. doi: 10.1177/0049124187016001004
- Billings, A. G., & Moos, R. H. (1983). Comparisons of children of depressed and nondepressed parents: A social-environmental perspective. *Journal of Abnormal Child Psychology, 11*, 463-486. doi: 10.1007/BF00917076
- Bowlby, J. (1979). *The making and breaking of affectional bonds*. London: Tavistock.
- Campbell-Sills, L., & Stein, M. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*, 1019–1028.

- Carver, M. D. & Jones, W. H. (1992). The Family Satisfaction Scale. *Social Behavior and Personality*, 20, 71-84. doi: 10.2224/sbp.1992.20.2.71
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82, 217–225. doi: 10.1016/j.jad.2003.12.013
- Charland, H., & Coté, G. (1998). The Children of Alcoholics Screening Test (CAST): Test-retest reliability and concordance validity. *Journal of Clinical Psychology*, 54(7), 995-1003. doi: 10.1002/(SICI)1097-4679(199811)54:7<995::AID-JCLP13>3.0.CO;2-F
- Chronister, J. A., Johnson, E. K., & Berven, N. L. (2006). Measuring social support in rehabilitation. *Disability and Rehabilitation*, 28, 75-84. doi: 10.1080/09638280500163695
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd Ed.). Mahwah, NJ: Lawrence Erlbaum.
- Collins, L. M., Schafer, J. L. and Kam, C. M. (2001). A comparison of inclusive and restrictive missing-data strategies in modern missing-data procedures. *Psychological Methods*, 6, 330-351. doi:10.1037//1082-989X.6.4.330
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18, 76–82.

- Cuijpers, P., Langendoen, Y., & Bijl, R. V. (1999). Psychiatric disorders in adult children of problem drinkers: prevalence, first onset, and comparison with other risk factors. *Addiction, 94*, 1489-1498. doi: 10.1111/j.1360-0443.2007.02063.x
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin, 116*, 387-411. doi:10.1037/0033-2909.116.3.387
- Dedert, E. A., Green, K. T., Calhoun, P. S., Yoash-Gantz, R., Taber, K. H., Mumford, M. M., ... Beckham, J. C. (2009). Association of trauma exposure with psychiatric morbidity in military veterans who have served since September 11, 2001. *Journal of Psychiatry Research, 43*, 830-836.
- Dinning, W. D., & Berk, L. A. (1989). The Children of Alcoholics Screening Test: Relationship to sex, family environment, and social adjustment in adolescents. *Journal of Clinical Psychology, 45*, 335-339. doi: 10.1002/1097-4679(198903)45:2<335::AID-JCLP2270450224>3.0.CO;2-Y
- Dube, S. R., Anda, R. F., Felitti, V. J., Croft, J. B., Edwards, V. J., & Giles, W. H. (2001). Growing up with parental alcohol abuse: Exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse & Neglect, 25*, 1627-1640. doi: 10.1016/S0145-2134(01)00293-9
- Efron, B., & Tibshirani, R. J. (1993). *An introduction to the bootstrap*. New York: Chapman & Hall.
- Elliott, J. C., Carey, K. B., & Bonafide, K. E. (2012). Does family history of alcohol problems influence college and university drinking or substance use? A meta-

analytical review. *Addiction*, 107, 1774-1785. doi: 10.1111/j.1360-0443.2012.03903.x

- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventative Medicine*, 14, 245–258. doi: 10.1016/S0749-3797(98)00017-8
- Fox, K. M. & Gilbert, B. O. (1994). The interpersonal and psychological functioning of women who experienced childhood physical abuse, incest, and parental alcoholism. *Child Abuse & Neglect*, 18, 849-858. doi: 10.1016/0145-2134(94)90064-7
- Frank, E., Levenson, J. C. (2010). *Interpersonal Psychotherapy*. Washington, DC: American Psychological Association.
- Grant, B. F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health*, 90, 112-115. doi: 10.2105/AJPH.90.1.112
- Hall, C. W., & Webster, R. E. (2002). Traumatic symptomatology characteristics of adult children of alcoholics. *Journal of Drug Education*, 32, 195-211. doi: 10.2190/U29W-LF3W-748L-A48M
- Hall, C. W., & Webster, R. E. (2007). Multiple stressors and adjustment among adult children of alcoholics. *Addiction Research and Theory*, 15, 425-434. doi: 10.1080/16066350701261865

- Harter, S. L. (2000). Psychosocial adjustment of adult children of alcoholics: A review of the recent empirical literature. *Clinical Psychology Review, 20*, 311-337. doi: 10.1016/S0272-7358(98)00084-1
- Harter, S. L., & Taylor, T. L. (2000). Parental alcoholism, child abuse, and adult adjustment. *Journal of Substance Abuse, 11*, 31-44. doi: 10.1016/S0899-3289(99)00018-8
- Harter, S. L., & Vanecek, R. J. (2000). Cognitive assumptions and long-term distress in survivors of childhood abuse, parental alcoholism, and dysfunctional family environments. *Cognitive Therapy and Research, 24*, 445-472. doi: 10.1023/A:1005531803919
- Heim, C., & Nemeroff, C. B. (2001). The role of childhood trauma in the neurobiology of mood and anxiety disorders: Preclinical and clinical studies. *Biological Psychiatry, 49*, 1023-1039. doi: 10.1016/S0006-3223(01)01157-X
- Heim, C., Newport, J., Mletzko, T., Miller, A. H., & Nemeroff, C. B. (2008). Childhood trauma and depression: Insights from HPA axis studies in humans. *Psychoneuroendocrinology, 33*, 693-710. doi: 10.1016/j.psyneuen.2008.03.008
- Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience? *The Canadian Journal of Psychiatry / La Revue canadienne de psychiatrie, 56*(5), 258-265.
- Hodgins, D. C., & Shimp, L. (1995). Identifying adult children of alcoholics: Methodological review and a comparison of the CAST-6 with other methods. *Addiction, 90*, 255-267. doi: 10.1046/j.1360-0443.1995.90225511.x

- Hoe, S. L. (2008). Issues and procedures in adopting structural equation modeling technique. *Journal of Applied Quantitative Methods*, 3(1), 76-83.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55. doi: 10.1080/10705519909540118
- Johnson, J., Sher, K., & Rolf, J. (1991). Models of vulnerability to psychopathology in children of alcoholics: An overview. *Alcohol Health Research World*, 15(1), 33-42.
- Jones, J. W. (1983). *The Children of Alcoholics Screening Test: Test manual*. Chicago: Camelot Unlimited.
- Karairmak O. (2010). Establishing the psychometric qualities of the Connor-Davidson Resilience Scale (CD-RISC) using exploratory and confirmatory factor analysis in a trauma survivor sample. *Psychiatry Research*, 179, 350-356.
- Kashubeck, S. (1994). Adult children of alcoholics and psychological distress. *Journal of Counseling & Development*, 72, 538-543.
- Kashubeck, S., & Christensen, S. A. (1992). Differences in distress among children of alcoholics. *Journal of Counseling Psychology*, 39, 356-362. doi: 10.1037/0022-0167.39.3.356
- Kelley, M. L., Braitman, A., Henson, J. M., Schroeder, V., Ladage, J., & Gumienny, L. (2010). Relationships among depressive mood symptoms and parent and peer relations in collegiate children of alcoholics. *American Journal of Orthopsychiatry*, 80, 204-212. doi: 10.1111/j.1939-0025.2010.01024.x



- Kendler, K. S., Kessler, R. C., Neale, M. C., Heath, A. C., & Eaves, L. J. (1993). The prediction of major depression in women: Toward an integrated etiologic model. *American Journal of Psychiatry, 150*(8), 1139–1148.
- Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1993). A longitudinal twin study of 1-year prevalence of major depression in women. *Archives of General Psychiatry, 50*, 843-852.
- Kim, H. K., & Lee, M. H. (2011). Factors influencing resilience of adult children of alcoholics among college students. [Abstract only]. *Journal of Korean Academy of Nursing, 41*, 642-51. doi: 10.4040/jkan.2011.41.5.642.
- Klerman, G. L., Weissman, M. M., Rounsaville, B. J., Chevron, E. S. (1984). *Interpersonal Psychotherapy of Depression*. Northvale, NJ: Jason Aronson Inc.
- Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3<sup>rd</sup> ed.). New York, NY: The Guilford Press.
- Klostermann, K., Chen, R., Kelley, M. L., Schroeder, V. M., Braitman, A. L., & Mignone, T. (2011). Coping behavior and depressive symptoms in adult children of alcoholics. *Substance Use & Misuse, 46*, 1162-1168. doi: 10.3109/10826080903452546
- Kubany, E. S., Haynes, S. N., Leisen, M., Owens, J. A., Kaplan, A. S., Watson, S. B., & Burns, K. (2000). Development and preliminary validation of a brief broad-spectrum measure of trauma exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment, 12*, 210–224.

- Lease, S. (2002). A model of depression in adult children of alcoholics and nonalcoholics. *Journal of Counseling & Development, 80*, 441-451. doi: 10.1002/j.1556-6678.2002.tb00211.x
- Lee, H., & Williams, R. A. (2013). Effects of parental alcoholism, sense of belonging, and resilience on depressive symptoms: A path model. *Substance Use & Misuse, 48*, 265-273. doi: 10.3109/10826084.2012.754899
- Lewandowski, R. E., Verdeli, H., Wickramaratne, P., Warner, V., Mancini, A., Weissman, M. (2014). Predictors of positive outcomes in offspring of depressed parents and non-depressed parents across 20 years. *Journal of Child and Family Studies, 23*, 800-811. doi: 10.1007/s10826-013-9732-3
- Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202. doi: 10.2307/2290157
- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7*, 19-40. doi: 10.1037//1082-989X.7.1.19
- Mallinckrodt, B. (2000). Attachment, social competencies, social support and interpersonal process in psychotherapy. *Psychotherapy Research, 10*, 239-266. doi: 10.1093/ptr/10.3.239
- Martin, M. J., Schumm, W. R., Bugaighis, M. A., Jurich, A. P., & Bollman, S. R. (1987). Family violence and adolescents' perceptions of outcomes of family conflict. *Journal of Marriage and Family, 49*, 165-171. doi: 10.2307/352680

- Mathew, R. J., Wilson, W. H., Blazer, D. G., & George, L. K. (1993). Psychiatric disorders in adult children of alcoholics: data from the Epidemiologic Catchment Area project. *American Journal of Psychiatry*, *150*, 793-800.
- Meredith, W. H., Abbott, D. A., & Adams, S. L. (1986). Family violence: Its relation to marital and parental satisfaction and family strengths. *Journal of Family Violence*, *1*, 299-305. doi: 10.1007/BF00978274
- Moe, J., Johnson, J. L., & Wade, W. (2007). Resilience in children of substance users: In their own words. *Substance Use & Misuse*, *42*, 381-398. doi: 10.1080/10826080601142147
- Muthén, L. K. & Muthén, B. O. (1998-2012). *Mplus User's Guide* (7<sup>th</sup> ed.). Los Angeles, CA: Muthén & Muthén.
- Nicholas, K. B., & Rasmussen, E. H. (2006). Childhood abusive and supportive experiences, inter-parental violence, and parental alcohol use: Prediction of young adult depressive symptoms and aggression. *Journal of Family Violence*, *21*, 43-61. doi: 10.1007/s10896-005-9001-3
- Nomura, Y., Wickramaratne, P. J., Warner, V., Mufson, L., & Weissman, M. M. (2002). Family discord, parental depression, and psychopathology in offspring: Ten-year follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*(4), 402-409.
- Olino, T. M., Yu, L., Klein, D. N., Rohde, P., Seeley, J. R., Pilkonis, P. A., & Lewinsohn, P. M. (2012). Measuring depression using item response theory: An examination of three measures of depressive symptomatology. *International Journal of Methods in Psychiatric Research*, *21*, 76-85. doi: 10.1002/mpr.1348

- Pilat, J. M., & Jones, J. W. (1984/85). Identification of children of alcoholics: Two empirical studies. *Alcohol Health & Research World*, 9(2), 27-33, 36.
- Preacher, K. J., & Coffman, D. L. (2006, May). Computing power and minimum sample size for RMSEA [Computer software]. Available from <http://quantpsy.org/>.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401. doi: 10.1177/014662167700100306
- Santor, D. A., Zuroff, D. C., Ramsay, J. O., Cervantes, P., & Palacios, J. (1995). Examining scale discriminability in the BDI and CES-D as a function of depressive severity. *Psychological Assessment*, 7, 131-139. doi: 10.1037/1040-3590.7.2.131
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, 44, 127-139. doi: 10.1037/0022-3514.44.1.127
- Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4, 497-510. doi: 10.1177/0265407587044007
- Schafer, J. L. and Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147-177. doi: 10.1037//1082-989X.7.2.147
- Sher, K. J. (1991). *Children of alcoholics: A critical appraisal of theory and research*. Chicago, IL: The University of Chicago Press.
- Sheridan, M. J. (1995). A psychometric assessment of the Children of Alcoholics Screening Test (CAST). *Journal of Studies on Alcohol*, 56, 156-160.

- SPSS Inc. (2009). *PASW Statistics for Windows, Version 18.0*. Chicago, IL: SPSS Inc.
- Staley, D., & el-Guebaly, N. (1991). Psychometric evaluation of the Children of Alcoholics Screening Test (CAST) in a psychiatric sample. *International Journal of the Addictions, 26*, 657-668.
- Stansbury, J. P., Ried, L., & Velozo, C. A. (2006). Unidimensionality and bandwidth in the Center for Epidemiologic Studies-Depression (CES-D) scale. *Journal of Personality Assessment, 86*, 10–22. doi: 10.1207/s15327752jpa8601\_03
- Tedeschi, R. G., Crystal L. Park, C. L., & Calhoun, L. G. (Eds.). (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Teyber, E., & McClure, F. H. (2011). *Interpersonal process in therapy: An integrative model* (6<sup>th</sup> ed.). Belmont, CA: Brooks/Cole, Cengage Learning.
- Tomarken, A. J., & Waller, N. G. (2003). Potential problems with “well fitting” models. *Journal of Abnormal Psychology, 112*, 578-598. doi: 10.1037/0021-843X.112.4.578
- Walker, J. P., & Lee, R. E. (1998). Uncovering strengths of children of alcoholic parents. *Contemporary Family Therapy, 20*, 521-538. doi: 10.1037/0022-3514.44.1.127
- Weissman, M. M., & Markowitz, J. C. (1994). Interpersonal psychotherapy: Current status. *Archives of General Psychiatry, 51*, 599-606. doi: 10.1001/archpsyc.1994.03950080011002
- Weissman, M. M., Markowitz, J. C., & Klerman, G. L. (2000). *Comprehensive guide to interpersonal psychotherapy*. New York: Basic Books.

- Werner, E. E., & Johnson, J. J. (2004). The role of caring adults in the lives of children of alcoholics. *Substance Use & Misuse, 39*, 699-720. doi: 10.1081/JA-120034012
- West, M. O., & Prinz, R. J. (1987). Parental alcoholism and childhood psychopathology. *Psychological Bulletin, 102*, 204-218. doi: 10.1037/0033-2909.102.2.204
- Williams, O. B., & Corrigan, P. W. (1992). The differential effects of parental alcoholism and mental illness on their adult children. *Journal of Clinical Psychology, 48*, 406-414. doi: 10.1002/1097-4679(199205)48:3<406::AID-JCLP2270480320>3.0.CO;2-L
- Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology, 21*, 152-169. doi: 10.1017/S0959259810000420
- Wright, D. M., & Heppner, P. P. (1993). Examining the well-being of nonclinical college students: Is knowledge of the presence of parental alcoholism useful? *Journal of Counseling Psychology, 40*, 324-334. doi: 10.1037/0022-0167.40.3.324
- Yama, M. F., Tovey, S. L., Fogas, B. S., & Teegarden, L. A. (1992). Joint consequences of parental alcoholism and childhood sexual abuse, and their partial mediation by family environment. *Violence and Victims, 7*(4), 313-325.

## APPENDIX A

### CHILDREN OF ALCOHOLICS SCREENING TEST

Please check the answer below that best describes your feelings, behavior and experiences related to a parent's alcohol use. Take your time and be as accurate as possible.

	Yes	No	Prefer not to answer
1. Have you ever thought that one of your parents had drinking problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Have you ever lost sleep because of a parent's drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did you ever encourage one of your parents to quit drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Did you ever feel alone, scared, nervous, angry or frustrated because a parent was not able to stop drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Did you ever argue or fight with a parent when he or she was drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Did you ever threaten to run away from home because of a parent's drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Has a parent ever yelled at or hit you or other family members when drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Have you ever heard your parents fight when one of them was drunk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Did you ever protect another family member from a parent who was drunk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Did you ever feel like hiding or emptying a parent's bottle of liquor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Do many of your thoughts revolve around a problem drinking parent or difficulties that arise because of his or her drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Did you ever wish that a parent would stop drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Did you ever feel responsible for or guilty about a parent's drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 14. Did you ever fear that your parents would get divorced due to alcohol misuse?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Have you ever withdrawn from and avoided outside activities and friends because of embarrassment and shame over a parent's drinking problem? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Did you ever feel caught in the middle of an argument or fight between a problem drinking parent and your other parent?                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Did you ever feel that you made a parent drink alcohol?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Have you ever felt that a problem drinking parent did not really love you?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Did you ever resent a parent's drinking?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Have you ever worried about a parent's health because of his or her alcohol use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Have you ever been blamed for a parent's drinking?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Did you ever think that your father was an alcoholic?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Did you ever wish your home could be more like the homes of your friends who did not have parent with a drinking problem?                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Did a parent ever make promises to you that he or she did not keep because of drinking?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Did you ever think your mother was an alcoholic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Did you ever wish that you could talk to someone who could understand and help the alcohol-related problems in your family?                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Did you ever fight with your brothers and sisters about a parent's drinking?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Did you ever stay away from home to avoid the drinking parent or you other parent's reaction to the drinking?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Have you ever felt sick, cried, or had a "knot" in your stomach after worrying about a parent's drinking?                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Did you ever take over any chores and duties at home that were usually done by a parent before he or she developed a drinking problem?       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



The maternal figure I completed this scale about is my:

- 1) Biological mother
- 2) Step-mother
- 3) Adoptive mother
- 4) I do not have a maternal figure
- 5) Other \_\_\_\_\_ (please write in who this person was – e.g., grandmother)

The paternal figure I completed this scale about is my:

- 1) Biological father
- 2) Step-father
- 3) Adoptive father
- 4) I do not have a paternal figure
- 5) Other \_\_\_\_\_ (please write in who this person was – e.g., grandfather)

## APPENDIX B

### TRAUMA LIFE EVENTS QUESTIONNAIRE

The TLEQ is not available in the public domain. Sample items are brief descriptors of each item as listed in Kubany et al. (2000), not actual items.

**1. Natural disaster**

- (a.) Never
- (b.) Once
- (c.) Twice
- (d.) 3 times
- (e.) 4 times
- (f.) 5 times
- (g.) More than 5 times

[If responding >0 to above item]

**1a. Did you experience intense fear, helplessness, or horror when it happened?**

Yes    No

**13. Witness to family violence**

- (a.) Never
- (b.) Once
- (c.) Twice
- (d.) 3 times
- (e.) 4 times
- (f.) 5 times
- (g.) More than 5 times

[If responding >0 to above item]

**13a. Did you experience intense fear, helplessness, or horror when it happened?**

Yes    No

**18. Sexual abuse as an adult**

- (a.) Never
- (b.) Once
- (c.) Twice
- (d.) 3 times
- (e.) 4 times
- (f.) 5 times
- (g.) More than 5 times

[If responding >0 to above item]

**18a. Did you experience intense fear, helplessness, or horror when it happened?**

Yes    No

## APPENDIX C

### CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SURVEY

Instructions: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week.

**0 = Rarely or none of the time (less than 1 day)**

**1 = Some or a little of the time (1-2 days)**

**2 = Occasionally or a moderate amount of time (3-4 days)**

**3 = Most or all of the time (5-7 days)**

**During the past week...**

1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	0	1	2	3
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	0	1	2	3
9. I thought my life had been a failure.	0	1	2	3
10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly.	0	1	2	3
16. I enjoyed life.	0	1	2	3
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people dislike me.	0	1	2	3
20. I could not get "going."	0	1	2	3

## APPENDIX D

### CONNOR-DAVIDSON RESILIENCE SCALE

The CD-RISC is not available in the public domain. Sample items are descriptions of each item as listed in Connor and Davidson (2003), not actual items.

	Not true at all 0	Rarely true 1	Sometimes true 2	Often true 3	True nearly all the time 4
1. Able to adapt to change	0	1	2	3	4
2. Close and secure relationships	0	1	2	3	4
3. Sometimes fate or God can help	0	1	2	3	4
4. Can deal with whatever comes	0	1	2	3	4
5. Past success gives confidence for new challenges	0	1	2	3	4
...					
21. Strong sense of purpose	0	1	2	3	4
22. In control of your life	0	1	2	3	4
23. I like challenges	0	1	2	3	4
24. You work to attain your goals	0	1	2	3	4
25. Pride in your achievements	0	1	2	3	4

## APPENDIX E

### FAMILY SATISFACTION SCALE

**Instructions:**

Please indicate the degree to which you agree or disagree with the statements below about your family.

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
1. In their treatment of one another, my family was consistent and fair.	1	2	3	4	5
2. I would do anything for a member of my family.	1	2	3	4	5
3. I had a good time with my family.	1	2	3	4	5
4. I always felt my parents supported me.	1	2	3	4	5
5. I always knew what I could and couldn't "get away with" at my house.	1	2	3	4	5
6. I was never sure what the rules were from day to day.	1	2	3	4	5
7. My family was one of the least important aspects of my life.	1	2	3	4	5
8. I would do anything necessary for any member of my family.	1	2	3	4	5
9. There was too much conflict in my family.	1	2	3	4	5
10. I usually felt safe sharing myself with my family.	1	2	3	4	5
11. I was happy with my family just the way it was.	1	2	3	4	5
12. Members of my family treated one another consistently.	1	2	3	4	5
13. There was a great deal about my family that I would have changed if I could.	1	2	3	4	5
14. With my family I could rarely be myself.	1	2	3	4	5
15. I was very unhappy with my family.	1	2	3	4	5
16. I was deeply committed to my family.	1	2	3	4	5
17. I often found myself feeling dissatisfied with my family.	1	2	3	4	5
18. My family has always believed in me.	1	2	3	4	5
19. I found great comfort and satisfaction in my family.	1	2	3	4	5

## APPENDIX F

### SOCIAL SUPPORT QUESTIONNAIRE, SHORT FORM

**INSTRUCTIONS:** The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the person's initials only. Do not list more than one person next to each of the letter beneath the question.

For the second part, circle how satisfied you are with the overall support you have. If you have no support for a question, leave the boxes blank, but still rate your level of satisfaction. Do not list more than nine persons per question.

**1. Whom can you really count on to distract you from your worries when you feel under stress?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**2. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**3. Who accepts you totally, including both your worst and your best points?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**4. Whom can you really count on to care about you, regardless of what is happening to you?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**5. Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**6. Whom can you count on to console you when you are very upset?**

- |    |    |    |
|----|----|----|
| 1) | 4) | 7) |
| 2) | 5) | 8) |
| 3) | 6) | 9) |

**How satisfied are you with this support?**

Very Satisfied	Fairly Satisfied	A little Satisfied	A little Dissatisfied	Fairly Dissatisfied	Very Dissatisfied
6	5	4	3	2	1

**APPENDIX G****DEMOGRAPHIC QUESTIONNAIRE**

1. What is your age? \_\_\_\_\_
2. What is your gender?       Male  Female  Transgender
3. What is your current year in school?  
 Freshman  Sophomore  Junior  Senior  Graduate  Other
4. Are you Hispanic?       Yes  No
5. What racial group BEST describes you?  
 African-American or Black  
 Asian, Asian-American, or Pacific Islander  
 Latino/a  
 Caucasian or White  
 American Indian or Alaskan Native  
 Multiracial  
 Other [\_\_\_\_\_]
6. What is your marital status?  
 Never married  
 Married  
 Divorced  
 Civil union  
 In a committed relationship  
 Other [\_\_\_\_\_]
7. Growing up, what was your family's approximate annual income?  
 less than \$25,000  
 \$26,000 - \$50,000  
 \$51,000 - \$75,000  
 \$76,000 - \$100,000  
 over \$100,000
8. What is the highest level of education achieved by your parent/parental figure with the most education?  
 No schooling completed  
 Nursery school to 8th grade  
 Some high school, no diploma  
 High school graduate - diploma or the equivalent (for example: GED)  
 1 or more years of college, no degree  
 Associate degree  
 Bachelor's degree  
 Master's degree



- Professional degree (for example: MD, DDS, DVM, LLB, JD)
- Doctorate degree (for example: PhD, EdD)

9. What is your biological parents' marital status?

- Never married
- Married
- Divorced
- Separated
- Civil union
- In a committed relationship
- Unknown
- Other [\_\_\_\_\_]

10. Whom do you consider to be your primary mother figure(s) as you were growing up? (Check all that apply)

- Biological mother
- Adoptive mother
- Stepmother
- Mother's partner
- Grandmother
- Aunt
- Other [\_\_\_\_\_]

11. Whom do you consider to be your primary father figures as you were growing up? (Check all that apply)

- Biological father
- Adoptive father
- Stepfather
- Father's partner
- Grandfather
- Uncle
- Other [\_\_\_\_\_]

12. Have you ever thought that your mother/primary mother figure had depression?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

13. Have you ever thought that your mother/primary mother figure had anxiety?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

14. Have you ever thought that your mother/primary mother figure had any other non-alcohol-related mental health problem (e.g., schizophrenia, bipolar disorder, OCD)?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

15. Have you ever thought that your father/primary father figure had depression?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

16. Have you ever thought that your father/primary father figure had anxiety?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

17. Have you ever thought that your father/primary father figure had any other non-alcohol-related mental health problem (e.g., schizophrenia, bipolar disorder, OCD)?

- Yes, it was diagnosed
- Yes, I think so
- Not sure
- No, I don't think so
- Definitely not

18. Did you ever think your mother/primary mother figure had a drinking problem?

- Yes
- No
- Prefer not to answer

18a. If yes, does this person still have a drinking problem?

- Yes
- No
- Prefer not to answer

18b. If no, how old were you when this person stopped drinking? \_\_\_\_\_

19. Did you ever think your father/primary father figure had a drinking problem?

- Yes
- No
- Prefer not to answer

19a. If yes, does this person still have a drinking problem?

- Yes
- No
- Prefer not to answer

19b. If no, how old were you when this person stopped drinking? \_\_\_\_\_

20. Have you ever received treatment from a mental health professional?

Yes  No  Prefer not to answer

21. Have you ever been prescribed antidepressant or anti-anxiety medication?

Yes  No  Prefer not to answer

## VITA

Erin Doty Kurtz  
 Department of Psychology  
 Old Dominion University  
 Norfolk, Virginia 23529

---

## EDUCATION

**Old Dominion University, Norfolk, VA** December 2014 (expected)  
**Master of Science in Experimental Psychology**

**Principia College, Elmhurst, IL** May 2002  
**Bachelor of Arts in French, with highest honors**

## RESEARCH EXPERIENCE

**Graduate Research Assistant, ODU Family Health Study** January 2012 - present  
**Department of Psychology, Old Dominion University, Norfolk, VA**

**Undergraduate Research Assistant,** April 2010 – May 2011  
**Developmental Psychopathology Lab**  
**Department of Psychology, University of Houston, Houston, TX**

## SELECTED PUBLICATIONS AND PRESENTATIONS

**Kurtz, E. D., & Kelley, M. L.** (2014, November). *Do social support and resilience buffer the effects of interpersonal trauma on depressive symptoms in a college population?* Poster presented at the 30<sup>th</sup> annual meeting of the International Society for Traumatic Stress Studies, Miami, FL.

Kelley, M. L., Linden, A. N., Milletich, R. J., Lau-Barraco, C., **Kurtz, E. D.**, D'Lima, G. M., . . . Sheehan, B. E. (2014). Self and partner alcohol-related problems among ACOAs and non-ACOAs: Associations with depressive symptoms and motivations for alcohol use. *Addictive Behaviors*, 39, 211-218. doi:10.1016/j.addbeh.2013.08.037

Kelley, M. L., Linden, A. N., Milletich, R. J., Lau-Barraco, C., **Kurtz, E. D.**, D'Lima, G. M., . . . Sheehan, B. E. (2013, November). *Self and partner alcohol-related problems among ACOAs and non-ACOAs: Associations with depressive symptoms and motivations for alcohol use.* Poster presented at the 47<sup>th</sup> annual convention of the Association for Behavioral and Cognitive Therapies, Nashville, TN.

Pane, H., **Doty, E.**, & Sharp, C. (2010, November). *Emotional reactivity as an endophenotype in the multigenerational transmission of depression between mothers and daughters.* Poster presented at the 44<sup>th</sup> annual convention of the Association for Behavioral and Cognitive Therapies, San Francisco, CA.