

**Gender, Coping Style, and Depression Severity in
Emerging Adult University Students**

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Dennis Allen Donahue
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Dedication

To my wife, Melisa;

Thank you for picking up my slack, even when you did not feel like it.

Acknowledgements

I have been blessed with the opportunity to study and learn under some of the most giving and remarkably talented people and professionals in the mental health field. Among those are my current program advisor, Dr. Gina Owens, without whose continuous support, frequent gentle prodding, and occasional stern push through the toughest of times, this would likely not have seen completion. Thank you for allowing me the space to feel my self-doubt so that I could process and regroup.

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Abstract

Much research has examined coping styles and their possible positive or negative relationship with psychological health and well-being in various populations. Many studies have identified coping methods that may be associated with lower levels of specific psychological symptomatology as well as those that may predict an exacerbation of distress. The current study replicated some of these findings in a population of emerging-adult college students. Using Tobin and colleagues (1989) hierarchical model of coping and the Coping Strategies Inventory, we examined the potential links between coping style, gender, and depression. Gender was found to be a weak predictor of depression prevalence and severity. Increased use of disengagement, or avoidant type coping, was a modest predictor of depression, and greater reliance on some of these coping methods was associated with increased depression severity. These findings may be important in developing student programs and services aimed at identifying and ameliorating students' depression, in the hope of affecting more successful adjustment to college and better overall student health.

Keywords: coping style, engagement versus disengagement, problem-focused versus emotion-focused, depression, emerging adults

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CHAPTER I: INTRODUCTION

In what may well be the first of many life changing events experienced throughout a lifetime, the first time a young person leaves home to enter college and embark upon early adulthood can be a psychologically and emotionally taxing period (Ames et al., 2011; Asberg, Bowers, Renk, & McKinney, 2008; Dyson & Renk, 2006; Fisher & Hood, 1987; Larose & Boivin, 1998; Renk & Smith, 2007; Shaver, Furman, & Buhrmester, 1985). New and transitioning students seem to be particularly susceptible to experiencing periods of increased depression, loneliness, and heightened anxiety (Cutrona, 1982; Pritchard, Wilson, & Yamitz, 2007; Reynolds, MacPherson, Tull, Baruch, & Lejuez, 2011; Shaver et al., 1998; Wintre & Yaffe, 2000). In fact, depression is considered one of the most common issues affecting college students (Moreno et al., 2011). According to Holmes and Rahe (1967), the act of simply entering college can be a stressor that may place the student at mild risk for stress-related illness. Furthermore, if additional commonly co-occurring factors—such as potential difficulties or even successes in academic performance, involvement with drugs or alcohol, interpersonal or relational adjustments—are present, then that risk may quickly increase to the moderate to severe range (Holmes & Rahe, 1967). Conversely, better adjustment to college seems to predict better overall health and well-being, as well as better academic performance (Aspinwall & Taylor, 1992). However, given that reported rates of depression in the college population have increased as much as 56% over recent years (Moreno et al., 2011), successful adjustment can be difficult to achieve for some students. Therefore, identifying reliable predictors and potential moderators for depression that can be applied to the college population may not only be beneficial but ultimately critical to ensuring adjustment.

Depression in College Students

According to the current Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) diagnostic criteria (American Psychiatric Association, 2013), depression is characterized by chronic feelings of sadness, emptiness, worthlessness, tearfulness, and irritability; diminished capacity to engage in desired activities; fluctuations in weight and energy level; difficulty concentrating; and sleep and psychomotor dysregulation. These symptoms cause significant distress as well as decreases in functioning across some or all areas of life. Additionally, untreated depression is widely accepted as the leading cause of suicide, highlighting the importance of its identification and treatment (Hawten, Casanas i Comabella, Haw, & Saunders, 2013).

The most recent health statistics from the National Institutes of Mental Health (NIMH; n.d.) show that approximately 21% of people 18-29 years of age experience some type of mood disorder. Rates of depression among college students reported from various sources have generally ranged from approximately 13%-20% (Christian & McCabe, 2011; Gawrysiak, Nicholas, & Hopko, 2009; Mackenzie et al., 2011; Reynolds et al., 2011). However, some recent large-sample studies involving college students have identified much higher depression rates, (Garlow et al., 2008; O'Hara, Armeli, Boynton, & Tennen, 2014). For example, Garlow and colleagues (2008) used an internet-based self-report method, conducted in conjunction with the American Foundation for Suicide Prevention's (AFSP) College Screening Project. This study reported the highest rate of depression found in our literature search (85.5%); however, only 8% of the approximately 9,000 participants contacted actually enrolled in the study (N=789), leaving some questions about generalizability. O'Hara et al. (2014) recently sought to identify possible links between stress-reactivity, positive affect, and depression in a non-clinical undergraduate college sample from a large state university. The authors found that 31% of their 1,818

participants reported having experienced at least one period of depression prior to enrollment in college. Thus, a significant number of students may have had depression symptoms prior to encountering any of the potential stressors of college life.

Additionally, recent National College Health Assessment data showed that 33.2% of undergraduates polled reported having “felt so depressed that it was difficult to function” at some point in the previous 12 months; 57.7% “felt overwhelming anxiety” and 47.8% “felt things were hopeless” at some time during the same period (American College Health Association, 2014). Finally, according to the latest National College Counseling Center Survey results (American College Counseling Association, 2014), of the counseling center directors at 4-year institutions polled ($N = 246$), a majority reported increases in numbers of students presenting with either clinical depression (57% of those polled) or anxiety disorders (88%).

Each symptom of depression may by itself negatively affect a student’s ability to be successful in college. For example, sleep disorder and fatigue can be detrimental to cognitive functioning and the ability to concentrate (Alapin et al., 2000; Pilcher & Walters, 1997), and students who have difficulty concentrating are more likely to drop out before graduating (Gilbert, 2008). Some studies examining variables that may contribute to first-year student attrition have shown that emotional factors, even more than academic factors, are the major cause of attrition (Pritchard & Wilson, 2003; Szulecka, Springett, & De Pauw, 1987). Having some or all of these symptoms converging into a depressive episode may leave an emerging adult struggling with stressors and distractors. Therefore, although we cannot prevent experiencing emotionally distressing situations, exploring the predictive and protective capabilities of factors such as coping style seems to be a prudent endeavor.

Coping Strategies

Given its importance in managing stressors, coping has received much attention in the literature, and various models of coping have been developed. Much of this previous work has focused on active or approach versus avoidant coping (Herman-Stahl, Stemmler, & Peterson, 1995; Suls & Fletcher, 1985), cognitive versus affective coping (Lazarus & Folkman, 1984; Folkman & Lazarus 1985), or a combination of these and/or other individual coping methods (e.g., Aldwin & Revenson, 1987; Carver, Scheier, & Weintraub, 1989; Coyne, Aldwin, & Lazarus, 1981; Folkman & Lazarus, 1980; Folkman & Lazarus 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Skinner, Edge, Altman, & Sherwood, 2003; Solomon, Mikulincer, & Avitzur, 1988; Thoits, 1982). Two of the more prominent theories will be described, followed by what may be considered a more comprehensive model by Tobin, Holroyd, Reynolds, and Wigal (1989), which was used in this study.

Approach and avoidance coping strategies essentially describe the differences between what we might consider to be the basic human self-defense mechanisms of “fight-flight-freeze” responses. Approach strategies involve attempts to actively respond cognitively and emotionally to whatever stressors or obstacles may be present; whereas, avoidance strategies involve attempts to cognitively and emotionally distract or disengage from either the presenting issues or one’s resulting internal reactions (Suls & Fletcher, 1985). Either approach or avoidance strategies can be natural, adaptive, and healthy ways of coping with stressors when utilized in accordance with necessity or appropriateness in a given situation. One example would be distracting oneself from thoughts and emotional pain during bereavement in order to stay professionally engaged while at work, then seeking out interpersonal support on personal time in order to cognitively and emotionally process grief. However, there appear to be additional temporal considerations that might impact the effectiveness of these strategies over time, specifically, whether they are used

in the immediate moment or for a short-term period following the initial onset of stress or in the long-term and with lingering distress (Suls & Fletcher, 1985).

In order to better understand the differences and define these potential parameters, Suls and Fletcher (1985) conducted a meta-analysis of the empirical literature, including 43 previous studies investigating the efficacy of approach and avoidance strategies. They concluded that overall neither type showed any meaningful superiority over the other. Rather, these differences in effectiveness related to time of implementation became evident. Specifically, they noted that avoidance strategies (e.g., drawing attention away from the source of distress or away from the sufferer's resulting psychological or somatic reactions) may be a beneficial way of mediating pain, stress, and anxiety in the short-term, in many cases showing better outcomes than approach strategies (e.g., focusing attention on the source of or reaction to the distress), particularly those involving emotional processing. However, approach strategies appeared to produce more positive outcomes over the long-term (Suls & Fletcher, 1985). Essentially, avoidance coping strategies may allow the individual to delay the potential negative effects of stress until the opportunity to process in a safer (e.g., physically, emotionally) setting and in a more thorough manner becomes possible. However, lingering distress appeared to be better mediated by approach strategies, lending support to the idea that there may indeed be a temporal boundary for efficacy, past which avoidance may become increasingly more psychologically detrimental than beneficial (Suls & Fletcher, 1985).

Another often-used model of coping is Lazarus and colleagues' theory of cognitive appraisals and coping (Coyne et al., 1981; Folkman & Lazarus, 1985; Lazarus & Folkman, 1984). In this theory, stress is defined as "a relationship between the person and the environment that is appraised by the person as relevant to his or her well-being and in which the person's resources are taxed or exceeded" (Folkman & Lazarus 1985, p. 152). Furthermore, Lazarus and

Folkman (1985) hypothesized that this interplay between the environment, one's primary and secondary cognitive appraisals, resulting emotions, and choice of coping method (i.e., emotion-focused or problem-focused) is implicated in the overall level of resulting distress.

Lazarus and colleagues (Coyne et al., 1981; Folkman & Lazarus, 1985; Lazarus & Folkman, 1984) describe primary cognitive appraisals as involving internal determinations of whether the situation or event is viewed as irrelevant (i.e., no threat to well-being), benign-positive (i.e., only involving a positive outcome), or stressful--which involves threat (i.e., potential for harm or loss), challenge (i.e., potential for growth, mastery, or gain), or harm-loss (i.e., tangible or intangible injury). Secondary cognitive appraisals involve the personal assessment and evaluation of one's own coping resources and response options (i.e., "what can I do?"). Emotions are considered to be ever-changing (i.e., evolving and diminishing/intensifying) byproducts arising as a signal of how one may be appraising ongoing interactions. Finally, in this theory (Coyne et al., 1981; Folkman & Lazarus, 1985; Lazarus & Folkman, 1984), coping refers to the cognitive and behavioral attempts to mediate these interactions with the environment. Problem-focused strategies are defined as cognitive attempts at managing or altering a stressor, while emotion-focused strategies (e.g., seeking emotional support, self-blame) are described as attempts at responding to a stressor through various methods of emotion regulation. Their research (Folkman & Lazarus, 1980; Folkman & Lazarus, 1985) has shown that individuals often use both types of coping and seem to determine which is appropriate based on their appraisal of the situation and whether or not the situation is viewed as changeable. Specifically, problem-focused strategies are employed more often when the situation is appraised to be changeable, while emotion-focused strategies are used more frequently when thought to be unchangeable.

Although Lazarus' theory of cognitive appraisals and coping (1984) has received wide support and remains a popular framework for understanding the interplay between stressful

encounters, cognition, coping, emotion, and psychological well-being, many researchers have since suggested that its view of coping as either simply problem-focused or emotion-focused is incomplete (Carver, Scheier, & Weintraub, 1989; Skinner et al., 2003; Tobin et al., 1989). This has prompted some researchers to reexamine coping, conducting factor analyses involving many individual coping items, in order to ascertain whether a more accurate model of coping may exist. For example, adding to the constructs of problem-focused and emotion-focused coping, Carver and colleagues (1989) noted that within each of the two established primary groups, items also seemed to align as either disengagement or engagement strategies.

In their seminal work on coping, Tobin and colleagues (1989) proposed a hierarchical model of coping (see Figure 1) based on a factor analysis of eight commonly identified and well-studied coping strategies, including many from the various models discussed previously—namely approach (i.e., problem-solving) and avoidance (i.e., problem avoidance, wishful thinking) strategies; cognitive (i.e., cognitive restructuring) and affective (i.e., expressing emotions, self-criticism) strategies; and, social support seeking or withdrawal. By examining these factors together and analyzing via hierarchical factor analysis techniques, Tobin and colleagues saw the emergence of a three-tiered structure under which these factors reliably loaded. They referred to these original eight coping factors as the primary (i.e., bottom) tier.

Problem-focused and emotion-focused styles, previously identified by Lazarus and Folkman (1984), emerged as a secondary (i.e., middle) tier. Tobin and colleagues (1989) found that cognitive-behavioral strategies loaded onto problem-focused factors (i.e., problem solving and cognitive restructuring as problem-focused engagement type; problem avoidance and wishful thinking as problem-focused disengagement type), and social-affective strategies loaded onto emotion-focused factors (i.e., express emotions and social support as emotion-focused engagement type; self-criticism and social withdrawal as emotion-focused disengagement type).

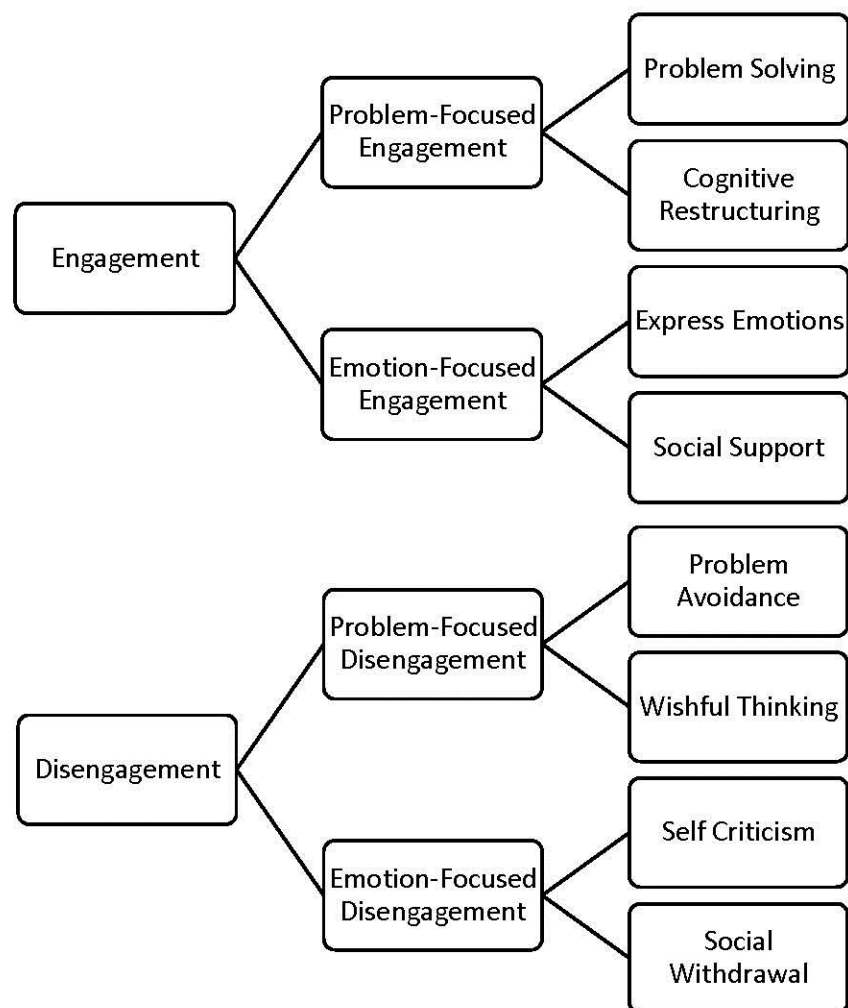


Figure 1.

Three-tier structure of Tobin's hierarchical model of coping

Finally, engagement and disengagement, previously widely conceptualized as active-approach and avoidant-distancing styles of coping emerged as the higher-ordered tertiary (i.e., top) tier factors in Tobin et al.'s (1989) model. As the terms imply, an engagement coping style entails active efforts to confront and attempt to resolve a stressor; whereas, disengagement often involves efforts to avoid or suppress thoughts and emotions concerning the stressor. Tobin and colleagues (1989) found that both problem-focused and emotion-focused strategies loaded onto each of these top tier factors (i.e., problem-focused engagement and emotion-focused engagement onto engagement style; problem-focused disengagement and emotion-focused disengagement onto disengagement style). Since its development, this model has become one of the most widely used models for illuminating coping style, while also having consistently demonstrated a high degree of reliability and validity. Therefore, we opted to use Tobin et al.'s hierarchical model of coping in the current study due to this established psychometric standard and its overall comprehensive nature, essentially combining components of the other main models within one framework.

Relationship between Coping Style and Depression

In subsequent years, continued research investigating differences in coping style has shown disengagement, or avoidant-type, coping strategies to be associated with greater disruptions in emotion regulation and distress tolerance, as well as difficulty in obtaining beneficial social support, all of which could be helpful in dealing with stressful events (Ames et al., 2011; Arthur, 1998; Christian & McCabe, 2011; Folkman & Lazarus, 1986; Renk & Smith, 2007; Rohde, Lewinsohn, Tilson, & Seeley, 1990). In a large-sample longitudinal study spanning 2 years, Rohde and colleagues (1990) looked at 48 various coping methods, which were determined after factor analysis to load onto three overall coping factors (labeled as cognitive self-control, ineffective escapism, and solace seeking), and their relationship to depression in a

community sample of older adults. The authors found that ineffective escapism (i.e., avoidance) was correlated with current depression and also served as a predictor of future depression. They also noted that, whereas solace seeking (i.e., an approach strategy) seemed to buffer stress in predicting depression, escapism exacerbated the negative effects of stress. Further, in a sample of emerging-adult college undergraduates, Christian and McCabe (2011) investigated the relationship between disengagement type coping mechanisms (i.e., self-blame, distancing, self-isolation), depression, and self-harm, which also could be conceptualized as a means of emotional numbing and avoidance. They found that depression was significantly correlated with all three of their identified disengagement coping strategies, as well as self-harm. In particular, self-isolation was shown to be related to both decreases in social support—an engagement type strategy—and increases in depressive symptoms. Disengagement coping has consistently been found to be a significant predictor of depressive symptomatology in various populations (e.g., Dyson & Renk, 2006; Penland, Masten, Zelhart, Fournet, & Callahan, 2000). Conversely, and in addition to previously identified direct benefit, engagement coping may also inherently provide greater access to internal (e.g., self-efficacy, resilience, social competence) and external (i.e., one's ability to acquire social support) protective factors (Ames et al., 2011; Aspinwall & Taylor, 1992). Indeed, research has shown that engagement coping style mediates factors such as self-esteem, optimism, and locus of control in predicting successful adjustment to college, which is viewed as a fairly reliable indicator of overall psychological health and well-being (Aspinwall & Taylor, 1992).

Additionally, research has shown that some emotion-focused coping strategies are associated with higher levels of psychological distress, whereas problem-focused coping is generally related to a more optimistic outlook and lower distress (Arthur, 1998; Billings & Moos, 1984; Carver et al., 1989; Kolenc, Hartley, & Murdock, 1990; Lapp & Collins, 1993; Pritchard,

Wilson, & Yamitz, 2007). Upon more specific item analyses, Billings and Moos (1984) found individual emotion-focused strategies in the realm of affective-avoidant (e.g., social withdrawal, self-criticism) or affective-confrontational (e.g., emotional discharge) strategies were associated with more depressive symptomatology, whereas other types of emotion-focused strategies (e.g., affect regulation) seemed to be associated with decreased depression symptomatology. This finding seems to underscore the reasons for expanding upon Lazarus and colleagues (1984) problem-focused/emotion-focused model and highlight the necessity of also looking at approach-avoidance elements within each main category.

Gender Considerations

Numerous studies have shown females to be at significantly higher risk than males for experiencing depressive symptomatology—ranging from 2:1, by most estimates, up to 4:1, noted by some specifically for major depression—(Angold, Costello, & Worthman, 1998; Culbertson, 1997; Gilman, Kawachi, Fitzmaurice, & Buka, 2002; Kessler, 2003; Nolen-Hoeksema & Girgus, 1994; Piccinelli & Wilkinson, 2000; Rohde et al., 1990). Rohde and colleagues (1990) found that female gender predicted future depression diagnosis, but not an increase in depression severity, seeming to indicate a gender-based vulnerability to periodic depression. Research has also shown that no gender differences in depression rates exist during prepubescence; however, by mid-puberty, substantial differences in depression prevalence begin to emerge (Angold et al., 1998; Nolen-Hoeksema & Girgus, 1994). This discrepancy has prompted some researchers to speculate that hormonal factors may play a large part in gender-based differences in depression. However, at this time there does not appear to be evidence to support this hypothesis over the likelihood of an interplay between various biological, cognitive, and environmental factors (Kessler, 2003). This interplay of factors is supported by findings from the APA Task Force on Depression (McGrath, Keita, Strickland, & Russo, 1990) that first identified females to be at higher risk for

depression, then went on to describe the factors that seemed to lead to this higher prevalence. The APA Task Force noted several apparent contributing factors, such as (a) posttraumatic stress, possibly resulting from physical or sexual abuse (b) marital status (c) number of children (d) economic status, and (e) personality type and cognitive style, specifically, decreased use of problem-solving strategies was found to be associated with depressive states.

Additional research (e.g., Billings & Moos, 1981; Billings & Moos, 1984; Dyson & Renk, 2006; Folkman & Lazarus, 1980; Lazarus & Folkman, 1984; Leong, Bonz, & Zachar, 1997; Ptacek, Smith, & Zanas, 1992; Renk & Smith, 2007) supports the APA Task Force's findings concerning differences in coping strategies. These studies found that females frequently report greater reliance on emotion-focused strategies such as emotional venting or discharge, as well as seeking social support. In contrast, males report use of more problem-focused and affect regulation strategies as a means of coping. Given the aforementioned findings that emotion-focused coping, particularly emotional discharge, is associated with higher levels of psychological distress and problem-focused coping is related to a more optimistic outlook and lower distress (Arthur, 1998; Carver et al., 1989; Kolenc et al., 1990; Lapp & Collins, 1993; Pritchard et al., 2007), higher depression prevalence in females seems likely and much of this increased risk for females may stem from the types of coping styles frequently employed. Taking these seemingly robust differences into account in the current study, we controlled for gender differences during our analyses, a practice which is also often used in studies of depression and coping.

Purpose of Present Study

The current self-report survey study explored the links between depression, gender, and coping style in emerging-adult students. First, we examined gender differences in rates of depression in a convenience sample of undergraduates, expecting to find depression more

prevalent among female respondents. We then examined gender and coping styles as potential predictors of depression severity. We expected to find, consistent with previously identified research, that gender would predict depression severity, with females showing greater severity. We also hypothesized that greater reliance on disengagement, or avoidant, coping would be associated with greater depression severity and, conversely, greater use of engagement or active coping would be associated with lower depression severity. Finally, based on the literature, we expected a significant interaction to exist between gender and coping styles in relation to depression severity. Specifically, we hypothesized that females would engage in more emotion-focused strategies, which would be positively associated with greater depression; and, males would engage in more problem-focused strategies, resulting in a negative association with depression.

CHAPTER II: METHOD

Participants

Study participants were 342 undergraduate students from a large public university in eastern Tennessee who were enrolled in an introductory psychology course. Of those who showed initial interest in the study ($N = 387$), one individual declined to participate during the informed consent process and one was excluded due to being under 18 years of age. Of the remaining 385 who received survey packets, 40 did not complete either one or both of the measures of interest (i.e., CES-D, CSI) and they were therefore excluded from analyses. Three others were excluded in order to observe a more homogenous sample during data analysis when they were identified as outliers based on age (27, 29, and 36 years old). Therefore, all 342 completers used in analysis were age 18 to 24 ($M = 18.65$, $SD = 0.91$). Over half of participants were female (59%). The majority of participants classified themselves as heterosexual (92.9%; $n = 318$). In terms of race, 82% ($n = 281$) were Caucasian, 6% were African American, 6% were Asian. Three percent of respondents reported Hispanic ethnicity. See Table 1 for a more detailed description of participant demographics.

Measures

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report questionnaire that measures the severity of depressive symptomatology. Items (e.g., “I felt hopeful about the future”; “I felt lonely”) are rated on a 4-point scale to indicate how often (i.e., 0 = rarely or none of the time; 1 = some or a little of the time; 2 = occasionally or a moderate amount of the time; 3 = most or all of the time) over the past week respondents have experienced certain thoughts, feelings, and behaviors commonly associated with depression. Scores are summed and range from 0 to 60, with higher scores representing greater depression severity. According to Radloff (1977), total scores from 15 to 21 can be indicative of mild to

moderate depression; any score above 21 suggests the possibility of major depression. Radloff found internal consistency for the CES-D to be .85 for the general population and .90 among a patient sample. Additionally, the CES-D showed moderate to high convergent validity (from .44 to .90) with similar measures of depression or closely related constructs (Radloff, 1977).

Cronbach's alpha for this study was $\alpha = .75$. Although the CES-D was originally developed for use in adult community samples, it also has been used extensively with college populations (Cohen, Kamarck, & Mermelstein, 1983; Radloff, 1991; Santor, Zuroff, Ramsay, Cervantes, & Palacios, 1995; Wei, Russell, & Zakalik, 2005).

Coping Strategies Inventory (CSI; Tobin et al., 1989) is a 72-item self-report questionnaire that prompts respondents to think about a past traumatic event and rate various statements indicating the respondent's use of various coping strategies (i.e., "I found ways to blow off steam"; "I slept more than usual") on a 5-point scale ranging from 1 = "Not at All" to 5 = "Very Much." Individual items load onto one of eight primary factors (i.e., problem solving, cognitive restructuring, express emotions, social support, problem avoidance, wishful thinking, self-criticism, social withdrawal), one of four secondary factors (i.e., problem-focused engagement, emotion-focused engagement, problem-focused disengagement, emotion-focused disengagement), and one of two tertiary factors (i.e., engagement, disengagement) within a 3-level hierarchical framework. Analyses in the current study focused solely on the secondary factors, emotion-focused disengagement, problem-focused disengagement, emotion-focused engagement, and problem-focused engagement. The CSI has shown high internal consistency ($\alpha = .71-.94$) and test-retest reliability between .67 and .83 among the eight primary factors; high internal consistency ($\alpha = .81-.92$) and test-retest reliability between .69 and .82 among the four secondary factors; and, high internal consistency ($\alpha = .89-.90$) and test-retest reliability between .78 and .79 among the two tertiary factors, disengagement versus engagement coping style

(Tobin et al., 1989). Additionally, Tobin and colleagues (1989) found the three-tiered structure of their model to be very stable, with Tucker's coefficients among all tiers ranging from .85 to .98 ($M = .91$); and, in a study by Penland and colleagues (1999), discriminant validity for the CSI was shown to be .72 in a sample of depressed and non-depressed college undergraduates assessed using the Beck Depression Inventory. Cronbach's alpha for secondary factors in this study was found to range from .90 to .93, again demonstrating high internal consistency. The CSI has been used extensively with diverse college populations (Chang, 1996; Cook & Heppner, 1997; D'Zurilla & Chang, 1995; Penland et al., 2000; Tobin et al., 1989; Yoo & Lee, 2005).

Procedure

Potential participants were made aware of this study, and the possibility of participation, in conjunction with a research participation requirement associated with their psychology course. All respondents received course credit in return for their participation. Survey packets were supplied to participants either during scheduled in-class briefings or by participant request after becoming aware of the study through SONA—the department of psychology's research-participation system—or word-of-mouth. Packets delivered to students during class periods were filled out and collected during that class period. Study staff did not collect personally identifiable information (PII) and all responses were completely anonymous. Due to not collecting any PII from participants, the requirement for signed consent was waived by the university Institutional Review Board. Participants acknowledged consent by filling out and submitting the study packet after being briefed about the study.

Data Analysis

SPSS software (version 22.0, IBM Corp.) was used for all statistical computation and data analyses. Internal consistency reliability for study measures and means, standard deviations, and correlations for all variables of interest were calculated. To investigate our initial

hypotheses related to gender differences in depression, we utilized independent samples *t*-tests to examine possible mean differences in prevalence and severity between genders. Independent variables were then examined and evaluated for appropriateness for multivariate analysis. To test our second and third hypotheses related to predictors of depression severity, independent variables that showed significant correlations with the dependent variable were included in a hierarchical multiple regression. Gender was entered as Step 1, and second tier coping styles were entered as Step 2. Possible interactions between gender and each of the four second tier coping styles (i.e., gender x problem-focused engagement, gender x emotion-focused engagement, gender x problem-focused disengagement, gender x emotion-focused disengagement) were then examined as Step 3 in the model. These interaction terms were produced by first mean-centering the independent variable scores, then multiplying the centered values (Aiken & West, 1991).

CHAPTER III: RESULTS

Depression Rates

In order to examine our first hypothesis that a higher prevalence of depression would be noted among females, probable depression was operationally defined as a score of 16 or higher on the CES-D (Radloff, 1977). Scores for the entire sample ranged from 7 to 50, for females from 7 to 50 and for males from 7 to 37. A majority of respondents ($N = 268$; 82%) scored between 16 and 50 ($M = 20.80$, $SD = 7.039$). Examining depression by gender, 83% of females ($N = 167$) in this sample scored at or above 16, meeting threshold for indication of at least mild depressive symptoms, compared to 72% of males ($N = 101$). Equality of variance not being assumed based on Levene's Test ($F = 20.964$, $p < .001$), a statistically significant difference was noted between females and males in depression prevalence [$t(265.237) = 2.267$, $p = .024$]. We then compared mean severity scores on the CES-D between females and males by performing an independent-samples t -test. As predicted, females ($M = 21.66$, $SD = 7.305$) scored significantly higher on depression severity than did males [$(M = 19.55$, $SD = 6.460)$; $t(340) = 2.756$, $p = .006$].

Predictors of Depression Severity

Next, to test hypothesis 2, a Pearson r correlation matrix was calculated to examine associations between gender, the four coping styles, and depression severity (see Table 2). Significant positive correlations were found between the dependent variable and all of the second tier coping styles (i.e., problem-focused engagement, emotion-focused engagement, problem-focused disengagement, emotion-focused disengagement). Significant negative correlations were found between the dependent variable and gender. Female gender was associated with greater use of emotion-focused engagement. Finally, significant positive correlations were found between all second tier copings styles, except for emotion-focused engagement with emotion-focused disengagement.

Table 2

Means, standard deviations, and correlations between independent and dependent variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Depression	20.80	7.039	--	--	--	--	--	--
2. Gender ^a	.41	.492	-.148**	--	--	--	--	--
3. Problem-Focused Engagement	44.48	14.774	.107*	.016	--	--	--	--
4. Emotion-Focused Engagement	45.11	14.821	.187**	-.154**	.627**	--	--	--
5. Problem-Focused Disengagement	43.99	12.917	.387**	-.089	.474**	.439**	--	--
6. Emotion-Focused Disengagement	36.58	14.366	.383**	.061	.265**	.093	.576**	--

Note: * $p < .05$, ** $p < .01$ (2-tailed)

^a For purpose of analysis, Gender was coded as follows: 0 = Female; 1 = Male.

Hierarchical multiple regression was then utilized to investigate possible predictors (i.e., gender, coping styles) and moderators of depression severity. To illuminate possible moderation, second tier coping style scores were first mean-centered, then the centered values were multiplied to produce interaction terms (Aiken & West, 1991). Given its established relationship with depression, gender was entered as the first step in the model. Step 2 variables included all second tier coping styles. To test hypothesis 3, the regression included a third step to investigate the potential moderating effect of gender in the relationships between the four coping styles and depression severity.

The overall model predicting depression severity was significant [$F(9,332) = 12.007, p < .001$], adjusted $R^2 = .23$ (see Table 3). Gender ($\beta = -.115, p < .05$), emotion-focused disengagement ($\beta = .283, p < .001$), problem-focused disengagement ($\beta = .222, p < .01$), emotion-focused engagement ($\beta = .156, p < .05$), and problem-focused engagement ($\beta = -.156, p < .05$), were significant predictors in the model, with emotion-focused disengagement accounting for the most variance in the model. None of the interaction terms in Step 3 were significant. Therefore, this step was dropped from the final regression model.

Table 3

Multiple regression analyses of 2nd tier coping styles predicting depression severity (final model)

Predictors ^b	Depression Severity (CES-D) ^a		
	<i>B</i>	SE	β
<u>Step 1</u>			
Gender ^c	-2.113	.767	-.148**
<u>Step 2</u>			
Gender	-1.725	.707	-.121*
PFE ^d	-.079	.031	-.167*
EFE ^d	.071	.031	.149*
PFD ^d	.120	.037	.219**
EFD ^d	.144	.030	.295***
<u>Step 3</u>			
Gender	-1.648	.705	-.115*
PFE	-.074	.031	-.156*
EFE	.074	.031	.156*
PFD	.121	.037	.222**
EFD	.139	.030	.283***
Gender x PFE	.065	.063	.067
Gender x EFE	.081	.063	.083
Gender x PFD	-.080	.075	-.072
Gender x EFD	-.069	.061	-.071

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^a Adj. R^2 Step 1 = .019, ΔR^2 Step 2 = .214, ΔR^2 Step 3 = .225

^b Interactions between gender and coping were not significant and were dropped from the final model.

^c For purpose of statistical analysis, Gender was coded as follows: 0 = Female; 1 = Male.

^d PFE = problem-focused engagement; EFE = emotion-focused engagement; PFD = problem-focused disengagement; EFD = emotion-focused disengagement.

CHAPTER IV: DISCUSSION

The current study explored the links between gender, coping styles, and depression severity in a sample of emerging-adult college students. Multiple significant relationships were identified, informing the available literature describing the mental health functioning of traditionally late-teen, early-career college students. In line with our first hypothesis, the current study found significantly greater depression rates and severity among females than among males. These results appear to closely mirror findings from previous studies looking at gender in relation to psychological distress, which have consistently found females at higher risk for suffering from periods of depression (Angold et al., 1998; Culbertson, 1997; Gilman et al., 2002; Kessler, 2003; Nolen-Hoeksema & Girgus, 1994; Piccinelli & Wilkinson, 2000; Rohde et al., 1990) as well as greater depression severity in females (Culbertson, 1997; Piccinelli & Wilkinson, 2000). As noted previously, this discrepancy has caused some to speculate that hormonal factors may play a large part. However, most research, including the current study, supports the likelihood of an interplay between various biological, cognitive, and environmental factors (Kessler, 2003; McGrath et al., 1990). Notably, the APA Task Force found contributing factors that seemed to lead to higher prevalence in females, such as posttraumatic stress, marital status, number of children, economic status, and interrelated personality type and coping style (McGrath et al., 1990).

Regarding coping style, many studies have found that females frequently report greater reliance on emotion-focused strategies (e.g., emotional venting or discharge, seeking social support) and males report greater use of problem-focused and affect-regulation strategies (Billings & Moos, 1981; Billings & Moos, 1984; Dyson & Renk, 2006; Folkman & Lazarus, 1980; Lazarus & Folkman, 1984; Leong et al., 1997; Ptacek et al., 1992; Renk & Smith, 2007). In addition, other research has found that emotion-focused coping is associated with greater

psychological distress (Arthur, 1998; Carver et al., 1989; Kolenc et al., 1990; Lapp & Collins, 1993; Pritchard et al., 2007). Although the current study did not find any significant direct interaction between gender and coping style in relation to depression, a significant association between female gender and emotion-focused engagement style coping did emerge.

Our second hypothesis, that gender and disengagement coping would be associated with greater depression was also partially supported, with all independent variables significantly predicting depression severity, and coping style accounting for 19.5% of variance. Gender, as hypothesized, was a significant predictor of depression severity, with females being associated with greater depression and gender alone accounting for 1.9% of the variance. Additionally, three of the coping styles, except for emotion-focused engagement (e.g., express emotion, social support) showed significant relationships with depression severity in expected directions. Specifically, problem-focused (e.g., problem avoidance, wishful thinking) and emotion-focused (e.g., self-criticism, social withdrawal) disengagement showed positive associations with greater depression; and, problem-focused engagement (e.g., problem solving, cognitive restructuring) showed a negative association, with higher levels of problem-focused engagement associated with lower depression severity. Adding additional credence to our hypothesis was the observation that greater use of disengagement styles (i.e., problem-focused and emotion-focused disengagement) was by far the strongest predictor of depression in this model.

In addition, our third hypothesis that females would engage in more emotion-focused coping and males in more problem-focused coping, and that this interaction would show coping style to emerge as a moderator in the relationship between gender and depression, was not supported. Although a significant correlation between female gender and emotion-focused engagement was noted, this did not prove to be a significant interaction in relation to predicting depression severity in our regression model, and no significant interactions were observed. This

is likely due to a lack of statistical power and the need for a larger sample population in order to detect interactions.

Thus, our results indicated that females in this sample experienced depression more often and in greater severity than did males. Females also endorsed greater use of emotion-focused engagement than did males. Greater use of emotion-focused engagement was found to be associated with greater depression severity in both genders. Conversely, greater utilization of problem-focused engagement was associated with lower depression in both genders. Otherwise, heavier reliance on disengagement (i.e., avoidant) coping proved to be a modest predictor of depression severity in both females and males. This would suggest that a focus on developing cognitive skills that allow one, regardless of gender, to actively attend to and cope with various life stressors and periods of emotional turmoil may be the most beneficial means of combatting depression. These findings are consistent with and add to the existing literature (Ames et al., 2011; Arthur, 1998; Christian & McCabe, 2011; Folkman & Lazarus, 1986; Renk & Smith, 2007; Rohde, Lewinsohn, Tilson, & Seeley, 1990), as well as reaffirm the validity of Tobin's (1984) hierarchical model's structure.

In terms of clinical implications, the current results support encouragement of specific coping styles and strategies or development of specific coping skills in general to be a means of alleviating a large portion of associated psychological distress when working with depressed patients. Additionally, these results would appear to support continued use of existing clinical interventions for depression: approaches such as Cognitive Therapy, which prompts the sufferer to develop and utilize problem-solving and cognitive-restructuring techniques; and, Behavioral Activation, which specifically targets emotion-focused disengagement (e.g., social withdrawal) by prompting sufferers to stop isolating and begin physically interacting with their environment again.

Limitations and Future Directions

Based on the large number of participants excluded as survey non-completers, the methods used for data collection may have been less than optimal for this population (i.e., Introduction to Psychology students volunteering anonymously in exchange for course research-participation credit). Given the possibility that many participants may have been motivated solely by the acquisition of needed course credit, providing survey packets *en masse* to large groups of students for them to “complete” on their own may have affected our ability to reduce potential for collecting back survey packets with a large amount of missing data. Nearly 10% of respondents did not complete a satisfactory portion of the survey to be included in analysis. Furthermore, of the remaining 90% who completed enough of the survey instruments to be included in this analysis, a majority did not complete, or completed functionally incorrectly, the additional survey measures that were necessary for examining the original study aims (i.e., long-term psychological effects of childhood trauma). This may have been a factor in the relatively low internal consistency observed for the CES-D. Essentially, some participants may not have been attentively reading through and responding to survey items in an honest and genuine way, which might account for the higher than expected inconsistency. Therefore, it appears prudent that we utilize scheduled participation appointments to engage potential participants individually so that any issues completing survey measures (i.e., item ambiguity, confusion, specific instructions) may be more readily identified and immediately addressed and surveys could be checked for their completeness.

Although this study involved a relatively large sample of respondents, the participants turned out to be a highly homogenous group of mostly middle class Caucasian-Americans, showing very little socio-cultural diversity. While this may be fairly well representative of a college population in eastern Tennessee, and lower Appalachian culture in general,

generalizability outside of this specific region would be unlikely. Therefore, adding these findings to the larger pool of past and continued research into links between coping styles and mental health may present the only benefit to the wider American populace. However, some greater direct value from the current study may be found in informing student health and wellness programs specific for this university and its unique population.

Additionally, by recruiting from students enrolled in Introduction to Psychology courses we were conceivably engaging a population representative of several majors and varying interests. However, focusing on this convenience sample of students inadvertently resulted in the recruitment of primarily freshman and sophomores. As a result, the sample was a highly skewed in terms of age to mostly 18- to 19- year-olds. This again turned out to be problematic for examining the original study aims, and served to even further limit the generalizability of the current study findings. By modifying recruitment methods and engaging the wider student body at large, rather than tying recruitment to those enrolled in a specific course, future research may greatly increase the diversity of their samples.

Examining the other potential contributing factors identified by the APA Task Force (i.e., trauma history, marital status, parenthood, SES, personality type) in conjunction with coping may be a robust and enlightening area for future research. Although we originally set out to also identify potential trauma history and possible resulting traumatic stress symptomatology (i.e., PTSD symptoms, comorbid depression, comorbid alcohol abuse), our collection methodology (highlighted earlier) proved to be an obstacle to attaining reliable data in this area. Therefore, even though we did collect some data concerning trauma, we determined that it would not be in line with good scientific rigor and practice to utilize potentially unreliable or misleading data. Additionally—as we did also collect data on marital status, number of children, and SES—a very culturally and chronologically homogenous emerging-adult college population, from a freshman

level introductory course, with a mean age of between 18 and 19 years old, greatly limited our ability to determine the potential effects and interactions stemming from these factors. Therefore, by adjusting methodology and casting a wider net to the entire university population (e.g., traditional and non-traditional undergraduates, graduate students), we may be able to acquire a much more diverse population of participants, allowing for a great deal more sampling and statistical power.

Also, of particular interest for study of coping and how various styles and strategies may relate to psychological distress may be the interplay between early attachment styles (e.g., parental attachment) and developing social competence and emotional intelligence; as well as, how might these factors influence and interact with gender, personality type, and coping to either build psychological resilience or increase risk for emotional dysregulation and psychological dysfunction. We may find that certain factors within some childhood environments (i.e., perceived support, encouragement of self-efficacy) may set the stage for developing more adaptive and flexible schemata and overall world views (i.e., balanced locus of control and self-confidence; individual identity unencumbered by societal pressures such as gender role stereotyping) that allow the individual to encounter and overcome adversity (i.e., cope) in less psychologically taxing ways. Essentially, some of these elements may serve as protective factors that account for and effectively moderate cognitive and affective differences currently seen in variables such as gender association with depression.

Conclusion

As predicted, emerging-adult female undergraduates showed a higher prevalence of depression and greater depression severity than did same age males. However, as seen in Rohde et al. (1990), although there was a statistically significant difference between depression prevalence in females and males in this sample, gender itself demonstrated only a weak

association and was not found to be a strong predictor of depression severity. Which coping style employed was a much stronger predictor, and those who relied largely on disengagement or avoidant methods reported higher levels of depression. This would seem to indicate that developing programs to teach students psychologically healthier methods of coping with general life and academic stressors (i.e., engagement styles) may affect lower psychological distress and allow for greater academic success.

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Appendix

Table 1

Respondent demographics

		<i>N</i>	%	<i>N</i> +	% +
Gender	Female	202	59.1	167	82.7
	Male	140	40.9	101	72.1
Orientation	Asexual	5	1.5	5	100.0
	Bisexual	8	2.3	7	87.5
	Heterosexual	318	92.9	246	77.4
	Homosexual	11	3.2	10	90.9
Race	Asian	20	5.8	16	80.0
	Black/African	21	6.1	18	85.7
	Caucasian	281	82.2	219	77.9
	Mixed Ancestry	13	3.8	11	84.6
	Other	7	2.0	4	57.1
Ethnicity	African/Caribbean	14	4.1	12	85.7
	European	45	13.2	35	77.8
	Far Eastern/Asian	14	4.1	11	78.6
	Hispanic/Latin	10	2.9	6	60.0
	Semitic/Middle Eastern	4	1.2	3	75.0
	Native American	4	1.2	3	75.0
	Pacific Islander	1	0.3	1	100.0
	American	239	69.9	190	79.5
	Mixed Ethnicity	10	2.9	6	60.0

Note: “N +” and “% +” represent the number and percentage of each subgroup that scored 16 or higher on the CES-D, indicating possible current depression.

Demographics Questionnaire

Please complete the following information about yourself.

1. What is your gender?
 - ☐ Female (1)
 - ☐ Male (2)
 - ☐ Transgender (3) If transgendered, with which gender do you identify? F M (Circle response)

2. What was your physical sex at birth?
 - ☐ Female (1)
 - ☐ Male (2)
 - ☐ Intersex (3)

3. What is your current physical sex?
 - ☐ Female (1)
 - ☐ Male (2)
 - ☐ Intersex (3)

4. What is your sexual orientation?
 - ☐ Asexual (1)
 - ☐ Bisexual (2)
 - ☐ Heterosexual (3)
 - ☐ Homosexual (4)

5. Which do you consider your primary racial ancestry? (*Select one*)
 - ☐ Asian (1)
 - ☐ Black or African (2)
 - ☐ Caucasian (3)
 - ☐ Native American / Alaska Native (4)
 - ☐ Native Hawaiian or Other Pacific Islander (5)
 - ☐ Mixed Ancestry (6)
 - ☐ Other (7), *please specify:* _____

6. Which do you consider your primary ethnic/cultural group? (*Select one*)
 - ☐ African (1)
 - ☐ Caribbean (2)
 - ☐ European (3)
 - ☐ Far Eastern or Asian (4)
 - ☐ Hispanic or Latin (5)
 - ☐ Semitic or Middle Eastern (6)
 - ☐ Native American (7)
 - ☐ Pacific Islander (8)
 - ☐ American (9)
 - ☐ Mixed Ethnicity (10)
 - ☐ Other (11), *please specify:* _____

7. What is your current age? _____
8. What is your current weight? (lbs): _____
9. What was your predominant body type during childhood and adolescence?
- ☐ Extremely underweight (1)
 - ☐ Moderately underweight (2)
 - ☐ Slightly underweight (3)
 - ☐ Height/weight proportionate (4)
 - ☐ Slightly overweight (5)
 - ☐ Moderately overweight (6)
 - ☐ Extremely overweight (7)
10. What is your height? feet _____ inches _____
11. Are you a person with a disability? Y N (*Circle response*)
12. If you answered yes to question #11 above, please select any that apply:
- ☐ Chronic health disorder, not due to normal aging (1)
 - ☐ Developmental or learning disability (2)
 - ☐ Hearing impairment (3)
 - ☐ Physical disability (4)
 - ☐ Psychological disability (5)
 - ☐ Speech impairment (6)
 - ☐ Visual impairment (7)
 - ☐ Not applicable (8)
 - ☐ Other (9), *please specify*: _____
13. If you answered yes to question #11 above, are you aided by some type of device? Y N
(*Circle response*)
If yes, please specify: _____
14. What is your religious affiliation? (*Select one*)
- ☐ Agnostic (1)
 - ☐ Atheist (2)
 - ☐ Buddhist (3)
 - ☐ Christian (4)
 - ☐ Jewish (5)
 - ☐ Hindu (6)
 - ☐ Muslim (7)
 - ☐ Non-specific, Spiritual (8)
 - ☐ Other (9), *please specify*: _____
15. What is your current relationship status? (*Select one*)
- ☐ Single, not in a relationship (1)
 - ☐ In a relationship, but not married and not living with partner (2)
 - ☐ In a relationship and living with partner, but not married (3)
 - ☐ Currently married (4) If currently married, how long have you been married? ____ years
____ months
 - ☐ Currently separated or divorced (5)
 - ☐ Widowed and not in a relationship (6)

16. How many times have you been married? 0 1 2 3 4+ (Circle response)
17. How many children and or step-children do you have? _____
18. How many individuals (aside from yourself) are living with you in your household? _____
19. What is the highest level of education that you have completed? (*Check highest education level*)
- ☐ Some High School (1) If not a graduate, what is your highest grade level completed? ____
 - ☐ GED (2)
 - ☐ High School Diploma (3)
 - ☐ Some College (4)
 - ☐ Certificate or 2-year Degree (5)
 - ☐ Associates Degree (6)
 - ☐ 4-year College Degree (7)
 - ☐ Masters Degree (8)
 - ☐ Doctoral Degree (Ph.D., M.D., DDS, etc.) (9)
20. What is your employment status? (*Select one*)
- ☐ Full-time (≥ 40 hrs/week) (1)
 - ☐ Part-time (2)
 - ☐ Student, unemployed (3)
 - ☐ Work occasionally, but not regular employment (4)
 - ☐ Unemployed, non-student (5)
21. What is your household income (yourself + others in your household)? (*Select one*)
- ☐ < \$10,000 (1)
 - ☐ \$10,000 - \$19,999 (2)
 - ☐ \$20,000 - \$34,999 (3)
 - ☐ \$35,000 - \$49,999 (4)
 - ☐ \$50,000 - \$99,999 (5)
 - ☐ > \$100,000 (6)
22. Are you now, or have you at anytime in your life, been homeless or residing in a shelter? Y N
(Circle response)

Vita

Dennis Allen Donahue was born at Fort Bragg, North Carolina, to CW5 (Ret.) Kenneth Allen “Doc” Donahue and Carmen W. Mendonsa-Donahue. In early 1997, he enlisted in the United States Army Military Intelligence Corps and served honorably in various capacities until late 2005, along the way earning Associate of Arts degrees in Russian Language and Russian Area Studies from Monterey Peninsula College and The Defense Language Institute in Monterey, California. Following active military service, he remained in San Antonio, Texas, and completed Bachelor of Arts degrees in Psychology and Criminal Justice at The University of Texas at San Antonio in 2009. After graduation, he began working as a Research Associate and eventual Protocol Coordinator in behavioral science research with the STRONG STAR Multidisciplinary PTSD Research Consortium at The University of Texas Health Science Center at San Antonio. After earning a Master of Arts in Community Counseling from The University of Texas at San Antonio in 2012, he entered the Counseling Psychology Doctoral Program at The University of Tennessee in Knoxville, Tennessee, in order to work and study with Dr. Gina P. Owens in her Military Stress and Health Research Lab. He is currently pursuing a Doctor of Philosophy in Counseling Psychology, with concurrent Master of Arts in Psychology, in the hope of eventually returning to direct service to active-duty and veteran service members as a Staff Psychologist and Researcher with either the Department of Defense or Department of Veteran’s Affairs.