The Understanding and Promotion of Resilience in College Students

by

Jorie Pollak Himmel

BA, Skidmore College, 2004
MS, Antioch University New England, 2012

DISSERTATION

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Department of Clinical Psychology
Keene, New Hampshire

DISSERTATION COMMITTEE PAGE

The undersigned have examined the dissertation entitled:

THE UNDERSTANDING AND PROMOTION OF RESILIENCE IN COLLEGE STUDENTS

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by

Jorie Pollak Himmel

Candidate for the degree of Doctor of Psychology
and hereby certify that it is accepted*.

Dissertation Committee Chairperson:
Roger L. Peterson, PhD, ABPP

Dissertation Committee members:
Lorraine Mangione, PhD
Joy von Steiger, PhD

Accepted by the

Department of Clinical Psychology Chairperson

George Tremblay, PhD

on **7/2/15**

***** Signatures are on file with the Registrar's Office at Antioch University New England.

Dedication

For Hal

Without you I'm not sure how I could possibly have made it through graduate school. You're my best friend and generally my favorite human. The ways you have supported me—not the least of which was moving back east to embark on this endeavor—are vast and numerous, and I am forever grateful. Throughout this process your unwavering love and support was a beacon of light in times of confusion, frustration, and exhaustion. Not only did you consistently remind me that there was a finish line to be reached, but you helped me get there and held my hand all the while.

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Abstract

Transitioning to college can be hard for many adolescents and emerging adults. The field of psychology has long asked the question, "What helps a person cope with transition and with stress in general?" Research has shown that *resilience* plays a key role. In recent years there has been a growing interest among psychologists in the concept of resilience, and most importantly in the cultivation of it as both a trait and a learnable skill. Despite this interest in the development and cultivation of resilience, resilience research to date has neglected to explore the ways in which emerging adults understand resilience and use it in coping with the monumental task of transitioning to college and into adulthood. This research aimed to gain a clearer understanding of what knowledge base the undergraduate students at a medium sized liberal arts college have about the concept of resilience and how to develop and employ resilience fostering behaviors. Several research questions were presented: What do resilience rates look like in a healthy college population? What do college students understand about resilience and about resilience fostering behaviors? Do students who report more understanding about resilience concepts and behaviors report higher resiliency in themselves? This research begins answering these questions by asking students about their current understanding of resilience as a concept, as well as their self-reported resilience behaviors. A measure was designed and utilized to evaluate conceptual understanding of resilience. My hypothesis was that students who describe having a greater understanding of resilience will also report higher scores on the resilience measures, as well as on several measures of constructs that have been shown to support resilience, such as optimism and self-mastery. Results from 157 participants include demographic data, multiple regression and correlation findings for quantitative measures, and qualitative data regarding resilience development and promotion. Findings indicate that conceptual understanding is not a

key predictor in resilience; however, optimism may play a central role in predicting resilience. Qualitative measures indicate that participating students have a high degree of interest in further resilience oriented education and training.

Keywords: resilience, emerging adulthood, undergraduates

The Understanding and Promotion of Resilience in College Students

Chapter 1

The transition to college can be hard for many adolescents and emerging adults. In fact, transitions can prove to be difficult for just about anyone. The field of psychology has long asked the question, "What helps a person cope with transition and with stress in general?" Research over the past four decades has shown that *resilience* plays a key role. The construct of resilience is commonly defined as, "the capacity to recover quickly from difficulties; toughness" (Google, 2014). Psychological research literature definitions center on resilience being: "the ability to adjust to stressful circumstances and persevere in the face of adversity" (DeRosier, Frank, Schwartz & Leary, 2013, p. 538), and "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (Masten, Best, & Garmezy, 1990, p. 426). In recent years, coinciding with momentum in the positive psychology movement (Seligman & Csikszentmihalyi, 2000), there has been a growing interest among psychologists in the concept of resilience, and most importantly in the cultivation of it as both a trait and a learnable skill. In fact, in 2010 the American Psychological Association published an online brochure dedicated to explaining resilience to the layperson and how one may cultivate it in him or herself. In this brochure, the APA explains, "resilience is not a trait that people either have or do not have. It involves behaviors, thoughts and actions that can be learned and developed in anyone" (APA, 2010).

Despite a growing interest in the development and cultivation of resilience in individuals, little has been investigated about resilience in healthy emerging adult populations. Research has primarily focused on resilience in children that are either deemed *at risk* or whom are already experiencing trauma and/or psychopathology (Campbell-Sills, Cohan, & Stein, 2006; Luthar,

Cicchetti, & Becker, 2000; Rutter, 1985, 2012; Tusaie, Puskar, & Sereika, 2007). For many adolescents, a major step in the transition to emerging adulthood is attending college. Resilience research to date has neglected to explore the ways in which late adolescents and emerging adults in the college population understand resilience and use it in coping with the monumental task of transitioning to and through college and into adulthood. Rather than narrowing the study of resilience to those at risk or with pre-existing psychopathology, a study of resilience in the college population allows for a broader understanding of the concept as a whole and thus adds to the field of research on the topic.

We do not currently know what knowledge base the college population has about the concept of resilience or how to develop and employ resilience fostering behaviors. What we do know is that first-year college students are particularly vulnerable to experiencing stress, anxiety, and depression (e.g., Dyson & Renk, 2006; Park, Edmondson, & Lee, 2012; Sasaki & Yamasaki, 2007; Sher, Wood, & Gotham, 1996). In addition to the monumental developmental tasks of differentiation and individuation (Jung, 1971; Mahler, Pine, & Bergman, 1985), first-year college students are also often dealing with increased academic pressure, decreased academic support (in comparison to high school), difficulty navigating the social transition, and increased financial concerns, not to mention the homesickness and loneliness that many first-year students feel (Hartley, 2011; Kadison & DiGeronimo, 2004; Park et al., 2012; Wei, Russell, & Zakalik, 2005).

Statement of the Problem

For these reasons, it becomes clear that having a greater understanding of resilience in this population could be particularly beneficial. Not only to universities, whose counseling centers are increasingly being asked to "do more with less" (Smith et al., 2007, p. 64), but also to the students themselves, who could benefit directly from increased knowledge about what

resilience is and how they might cultivate it. A college student's understanding of resilience and of the thoughts, behaviors, and actions that make up an individual's resilience characteristics may impact his or her academic performance, feelings of social acceptance, and ability to handle the ongoing stressors of his or her college career. Bernard (2004) encouraged educators to think about resilience as an innate capacity to be developed rather than a preexisting trait in some people but not all. Similarly, Reivich and Shattè (2002) identified resilience as a characteristic to be developed by individuals. In their research they identified this capability as a "basic strength underpinning positive characteristics within a person's emotional and psychological make up" (p. 59).

Thus, several research questions present themselves: What do resilience rates look like in a range of students in a college population? What do college students understand about resilience and about resilience fostering behaviors? Do students who report more understanding about resilience concepts and behaviors report higher resiliency in themselves? Finally, how do several demographic variables (such as age, ethnic minority status, class year, gender, family of origin socioeconomic status, and highest level of parental education) impact self-reported resilience in the college student population?

Purpose of the Study

This research aims to begin answering these questions by asking a convenience sample of undergraduate college students about their current understanding of resilience as a concept, as well as their self-reported resilience behaviors in daily life. My hypothesis was that students who describe having a deeper understanding of resilience would also report higher scores on a measure of resilience as well as on several measures of constructs that have been shown to support resilience. Additionally, I hypothesized that students who are further along in their

college careers (higher class year) will score higher on the conceptual understanding of resilience scale, and will additionally report higher resilience scores. Finally, I hypothesized that increased reports of depression, anxiety, and stress will decrease reports of resilience. Data that was gathered in this study was analyzed with these hypotheses in mind.

The goal of this research was to broaden the field's current knowledge of how a range of emerging adults in a college population understand resilience and report their own resiliency. I was interested in gathering data on a range of students, rather than only on those identified as having previous trauma experiences, or on those deemed "healthy" or predisposed to greater mental health. Future longitudinal studies would be advised to examine the effects of development on students as they continue through college and beyond, as well as studies employing additional methods that could corroborate self-report measures. Strengths-based approaches to wellness are increasingly in demand, and thus, research into the area of resilience in healthy populations is well timed. I believe that the results of this study contribute to a deeper understanding of how college students currently understand resilience and provide support for developing resilience training for students on college campuses.

Summary

What has been presented here is the introduction to a study of resilience in college students. The background of the problem has been discussed including the dearth in current research findings on how a healthy population of college students understands and reports resilience. Research questions have been put forth for examination, as well as several hypotheses about what findings arose from the study.

The following chapters provide a review of literature that is relevant to this study, study methodology, results, and a discussion of the findings. The areas covered include examining

definitions of resilience, exploring a history of resilience research (with special consideration given to the research on stress, coping, and appraisal; the positive psychology movement and specifically research on positive emotions), developmental psychology perspectives (with a focus on emerging adulthood and Chickering's [1969] theory of identity development), and a look at resilience in college populations in particular. Subsequently, the methods for the study at hand are detailed, including a description of participants, a description of the research design, a review of the measures, data analysis, and a presentation of hypotheses.

In the results chapter, the reader will find the data and analysis conducted for this study. The findings presented include demographic data, results from the Conceptual Understanding of Resilience Scale, results gathered from hypothesis testing including multiple regression and correlation data, and lastly an overview of the qualitative data gathered regarding resilience development and promotion. Results from the 157 study participants indicate that conceptual understanding is not a key predictor in resilience. Findings do indicate however, that optimism may play a central role in predicting one's resilience. No demographic factors are specifically found to have a significant relationship to conceptual understanding of resilience. Qualitative measures indicate that participating students have a high degree of interest in further resilience oriented education and training. Despite the findings here, students believe that greater knowledge around the topic of resilience would foster increased use of resilient coping strategies.

Finally, the discussion section explores the results including a more detailed look at the demographic findings, as well as an examination of the conceptual understanding of resilience findings. The discussion section also holds a comparison of present results to those found in prior research, an exploration of various limitations of the current study, and finally, suggestions for further inquiry within this research area.

Chapter 2: Literature Review

Definitions of Resilience

Resilience emerged as a concept in the literature on psychopathology in the early 1970s. Then, the idea of *resilience* was conceptualized as a personality characteristic that remained stable. Over time however, more research has allowed that conceptualization to shift such that resilience is now thought of as a dynamic, ongoing process between an individual and his or her environment (Luthar et al., 2000; Luthar, Sawyer, & Brown, 2006; Luthar & Zelazo, 2003; Vanderbilt-Adriance & Shaw, 2008).

Prior to the construct of resilience being researched, concepts such as *invulnerability* and *invincibility* were being used to describe the process of adaptation following adverse circumstances (Anthony, 1974; Earlvolino-Ramirez, 2007). At that time, the term invulnerability was used to describe an aspect of an individual's makeup that was "absolute and unchanging" (Luthar et al., 2000, p. 544). It was in part due to this restriction in definition, along with the ever clearer supporting evidence for the notion that, "positive adaptation despite adversity involves a developmental progression" (Luthar et al., 2000, p. 544) that led researchers to expand their investigations into the concept of resilience.

Throughout the research on resilience and since the early studies (Anthony, 1974; Garmezy, 1983; Rutter, 1979), numerous definitions of resilience—sometimes from the same researchers over time—have been put forth. One common definition of resilience that has been used frequently is "the ability to adapt successfully despite adversity" (Garmezy & Masten, 1991, p. 151). Masten et al. (1990) define resilience as "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (p. 426). Ingram and Price (2001) have added to the conceptualization of resilience that it may exist along a

continuum with vulnerability. This "implies a resistance to psychopathology, though not a total invulnerability to the development of psychiatric disorder" (Campbell-Sills et al., 2006, p. 586). Burton, Pakenham, and Brown (2010) expand upon this notion by outlining several consequences to having low resilience as being at increased risk for interpersonal difficulties, stress, anxiety, and depression (p. 266).

Monroe and Simons (1991) helped us to understand resilience within the framework of the diathesis-stress model in which "stress activates a diathesis, transforming the potential of predisposition into the presence of psychopathology" (p. 406). According to Hartley (2012) however, "the diathesis-stress model fails to capture the presence or absence of protective factors" (p. 38) such that we neglect to consider the reduction of the impact stress by use of an individual's internal or external protective factors (Egeland, Carlson, & Sroufe, 1993). Gordon and Song (1994) contend that defining resilience can be difficult "because resilience may not be a single construct, but, a complex of related processes that deserve to be identified and studied as discrete constructs" (p. 30). Finally, in a literature review by Jackson, Firtko, and Edenborough (2007), we are reminded that over the course of its theoretical development, resilience has been defined as "a trajectory, a continuum, a system, a trait, a process, a cycle, and a qualitative category (Bonanno 2004, 2005; Flach 1980, 1988; Jacelon 1997; Rutter 1985; Tusaie & Dyer 2004)" (p. 2).

For the purposes of this study, the simplistic yet thorough definition of resilience given by Tugade and Fredrickson (2004) will remain our guide. They define resilience as the capacity to move on in a positive way from negative, traumatic, or stressful experiences.

History of Resilience Research

Since at least the late 1970s seminal studies on resilience focused specifically on

children's responses to and recovery from adverse circumstances (Garmezy, 1991; Rutter, 1979, 1985; Werner & Smith, 1982). According to Wright, Masten, and Narayan (2013) the study of resilience has occurred in four major waves. In a review of resilience research literature, Grafton, Gillespie, and Henderson (2010) summarize the four waves of research nicely. The first wave of research identifies resilience as a set of characteristics a person could possess (such as hardiness, coping, and self-efficacy). In this wave of study, researchers examined the effects of major trauma or adversity on an individual's ability to cope and recover (Baron, Eisman, Scuello, Veyzer, & Lieberman, 1996; Wagnild & Young, 1993).

Major findings during this wave were (a) that specific characteristics facilitate children and adolescents' likelihood of adapting to adverse circumstances, (b) these common characteristics can serve as "'protective factors' that assist individuals to recover from and thrive despite adversity" (Grafton et al., 2010, p. 699) and (c) that the characteristics that make up resilience stem from both biological and psychological factors (Grafton et al., 2010). During this stage of research, little agreement was fostered among researchers about which characteristics specifically were common for everyone (Grafton et al., 2010). Despite this, research in the first wave of inquiry ultimately lead to, "a paradigm shift away from merely identifying resilient characteristics to a second wave of inquiry—one of seeking to identify how these characteristics or qualities were acquired (Earvolino-Ramirez, 2007; Richardson, 2002)" (Grafton et al. 2010, p. 700).

The second wave of resilience research understands resilience as a dynamic process in which someone experiences adversity followed by positive integration and learning from that experience (Gillespie, Chaboyer, & Wallis, 2007; Luther & Cicchetti, 2000; Rutter, 1999). This understanding of resilience as a dynamic process allows us to see resilience as something that

can be learned and taught (Gillespie, Chaboyer, Wallis, & Grimbeek, 2007). Several researchers found measureable results of this process using cognitive transformation practices resulting in increases in self-efficacy, adaptability, and resilience (Jackson et al., 2007; Waite & Richardson, 2004). The second wave attempted to provide an understanding of the processes leading to resilience in development (Wright & Masten, 2005). This wave adopted a developmental systems approach to understanding resilience and focused on positive adaptation in the face of adversity. The second wave of research on resilience also began to include the impact of cultural influences on resilience. Researchers started to examine the cultural traditions, religious rituals and community services that were contributing to fostering resilience in youth (Wright & Masten, 2005).

It follows then, that the findings from the previous waves of research, indicating that resilience can be acquired, that it is a learned behavior (Neihart, 2006), and that it is "ordinary magic" (Masten, 2001, p. 227), would lead to the central component of the third wave of research: preventative interventions and policy shifts regarding resilience (Luthar et al., 2000; Rutter, 2000). In this third wave, which continues as the fourth wave emerges, the focus on cultivating resilience by utilizing preventive interventions (Masten & Wright, 2010) has targeted quite a number of protective processes and demographic groups. Specifically, interventions that have been focused on promoting resilience through particular protective processes such as mastery, social engagement, executive functioning skills, and emotion regulation (e.g., DeRosier et al., 2013; Diamond, Barnett, Thomas, & Munro, 2007; Park et al., 2012) fall into this category, as well as policy implications that have included recommendations for teachers, parents, and professionals regarding the ways in which they can help to foster resilience in youth.

The fourth wave of resilience research is also currently underway and is integrative in

nature. In this wave growing attention is being paid to "epigenetic and neurobiological processes, brain development, and the ways that systems interact to shape development" (Wright et al., 2013, p. 16). Examples of this are researchers such as Cicchetti and Curtis (2006, 2007) who are looking at the role of neuroplasticity in resilience.

Stress, appraisal, and coping. A central component in the history of resilience research has been the research done on stress, appraisal, and coping. Lazarus' seminal work on stress, appraisal, and coping (1984, 1985) helps us to understand that the term *stress* refers to "the operation of many variables and processes in situations in which the demands tax or exceed the person's resources, and the person appraises the encounter as relevant to well-being, engages in coping processes, and responds cognitively, affectively, and behaviorally to feedback about what is happening" (Lazarus, 1985, p. 777). Stress, then, is not an independent variable impacting a person's well-being, but rather a relationally dynamic person-environment interaction. The experience of an event as stressful is inextricably linked to an individual's appraisal of that event, as well as his expectations of coping. Lazarus proposed the idea of *primary appraisal*, in which a person asks himself what is at stake during a given event, and then *secondary appraisal*, in which a person evaluates his resources for coping with the demands of the situation (Lazarus, 1991; Lazarus & Folkman, 1984). It becomes clear then, that individual differences contribute dramatically to one's experience of stress.

It was this understanding of the person-environment interaction with regard to stress experiences that led to the concept of individual resilience. Lazarus based his understanding upon a relational model of disease that describes "host resistance" (e.g., Cassell, 1976; Syme 1984). The concept of host resistance explains the contributions of an individual organism that affect whether infection occurs. Similarly, one individual may experience a certain event as

stressful while another does not (appraisal), thus impacting one's coping style and strategy. These conceptualizations are fundamental to our current understanding of the construct of resilience. Also of great importance are the different coping strategies that have been explored in the research. In particular, *emotion-focused coping* refers to an individual's "attempts at moderating [his] emotional response to an event that itself cannot be altered," while *problem focused coping* "refers to attempts to meet the stressful event head on and remove its effects" (Peterson, 2006, p. 241). Lazarus (1991) believed that neither coping style was best for all circumstances, but rather effective coping depended on both the individual and the situation.

Additionally, research by DeLongis, Coyne, Dakof, Folkman, & Lazarus (1982), Kanner, Coyne, Schaefer, & Lazarus, (1981), and Lazarus and DeLongis (1983) gave rise to the concept of daily hassles and development of The Daily Hassles Scale. Hassles are defined as "irritating, frustrating demands that occur during everyday transactions with the environment" (Holm & Holroyd, 1992, p. 465). Through the daily hassles research we learned that one's experience of everyday stressors can often be a better predictor of perceived stress and vulnerability to illness than can larger indicators such as major life events. It follows then that researching resilience in populations that are not limited only to those individuals who have faced great adversity, but also to individuals who have experienced average daily hassles could be greatly informative to our understanding of health, vulnerability, appraisal, and coping.

Positive psychology and resilience. Positive psychology has taught us that attending to that which is good in life, that which goes right, is a worthwhile endeavor (Peterson, 2006). Martin Seligman, in his role as president of the American Psychological Association (1998) popularized the field of positive psychology by naming it as an APA initiative. Seligman and Csikszentmihalyi (2000) define positive psychology as "the scientific study of positive human

functioning and flourishing on multiple levels that include the biological, personal, relational, institutional, cultural, and global dimensions of life" (p. 5). While respecting the considerable knowledge gained from the historical focus on pathology within the field of psychology, the positive psychology movement challenges the disease model and strives to focus on strength as much as weakness (Peterson, 2006). A fundamental assertion of positive psychology is that understanding and helping to support the lives of healthy people is as important as helping to heal the wounds of those in distress (Seligman & Csikszentmihalyi, 2000). This includes examining ideas such as genius and talent, creativity and self-actualization, and agency and efficacy (Maslow, 1970; Peterson, 2006; Winner, 2000). In particular, positive psychology researchers tend to be interested in four primary areas: (a) positive experiences, (b) enduring psychological traits, (c) positive relationships and (d) positive institutions (Peterson, 2009). Questions surrounding the "*how?*" of psychological wellness, as well as those seeking to understand the relative wellness of some as compared to the suffering of others, have lead to a convergence with research in the area of resilience.

The role of positive emotions. In their research, Tugade and Fredrickson (2004, 2007) have explored the role of positive emotions and negative emotion regulation on trait resilience. In several studies using the Ego-Resiliency Scale (Block & Kremen, 1996) Tugade and Fredrickson (2004) determined that experiencing positive emotions aided in the accelerated cardiovascular recovery of resilient individuals after negative emotional arousal. Their research findings support the idea that "positive emotions contribute to the ability for resilient individuals to physiologically recover from negative emotional arousal" (p. 331) more quickly than low resilient individuals. Additionally, the researchers found that high-resilient individuals appraised stressful tasks as less threatening, compared with low-resilient individuals. As Tugade and

Fredrickson (2004) point out, it is notable that there is an evolutionary advantage to perceiving threat in negative experiences (e.g., when faced with imminent danger), however extended periods of negative appraisal can have disadvantageous health effects (Lazarus & Folkman, 1984). Thus, being able to appraise stressful experiences as less threatening, as high-resilient individuals may do, can be beneficial.

Developmental Perspectives

Masten and Wright (2010) point out that developmental perspectives in psychology have played a vital role in the research of resilience from the beginning, "scholars who were interested in the etiology of psychopathology (including those who pioneered the study of resilience) were interested in following the course of development with respect to positive and negative adaptation" (p. 214). It is important then that we consider several constructs of psychological development as we review resilience in a college student population.

Erik Erikson (1950, 1968, 1985), in his seminal work in developmental psychology gave us eight stages of human development, each with its own psychosocial crises to be faced and overcome. Of particular interest to us here are the stages of adolescence and young adulthood in which Erikson (1985) proposed the crises of *identity vs. identity confusion* and *intimacy vs. isolation* respectively. Erikson's work helps us to understand that there is a normal course of human development, and that within that progression one occasionally finds oneself revisiting the conflicts of a previous stage; or as Peter Blos (1967) put it, *regression in the service of development*.

In *Identity: Youth and Crisis*, Erikson (1968) speaks of the necessary leeway toward and resourcefulness of young people, such that identity formation is cultivated. When these are not present he finds that "youth after youth, bewildered by the incapacity to assume a role forced on

him by the inexorable standardization of American adolescence, runs away in one form or another, dropping out of school, leaving jobs, staying out all night, or withdrawing into bizarre and inaccessible moods" (p. 132). From this we can understand that the task of identity development is a normal, albeit challenging, one, thus the issue of resilience becomes deeply relevant. Erikson goes on to state that, "The youth who is not sure of his identity shies away from interpersonal intimacy … Where a youth does not accomplish such intimate relationships with others—and, I would add, with his own inner resources – in late adolescence or early adulthood, he may settle for highly stereotyped interpersonal relations and come to retain a deep *sense of isolation*" (p. 135).

In addition to his conceptualization of identity formation, Erikson (1985) introduced us to the idea of "*psychosocial moratorium*: a period of sexual and cognitive maturation and yet a sanctioned postponement of definitive commitment … providing a relative leeway for role experimentation … all significant for the adaptive self-renewal of society" (p. 75). The concept of a psychosocial moratorium is essential to the understanding of the developmental tasks expected during adolescence and young adulthood, and has led to a deeper understanding of developmental processes during that time through Arnett's (2000) conceptualization of *emerging adulthood.*

Emerging adulthood. This study focuses on a very particular subset of the population, one that has specific developmental considerations and implications. Specifically the research is conducted with a population of *emerging adults*. Arnett (2000) described emerging adulthood as the period of time between adolescence and young adulthood. In particular, he considered the ages 18 to 25 to be when most individuals experience emerging adulthood phenomena. Research has found that emerging adulthood is a period of great change for most individuals. As

mentioned earlier, transitions, even ones with a positive emotional valence, are often experienced as difficult. This makes the examination of resilience during emerging adulthood particularly interesting.

Several aspects of Arnett's (2000) theory of emerging adulthood standout as particularly important to this research. Arnett states:

> Emerging adulthood is distinguished by relative independence from social roles and from normative expectations. Having left the dependency of childhood and adolescence, and having not yet entered the enduring responsibilities that are normative in adulthood, emerging adults often explore a variety of possible life directions in love, work, and worldviews. (p. 469)

Emerging adulthood is laden with change and exploration, in many realms more so than any other time in normal development. However, as Arnett (2000) describes:

> Although the identity explorations of emerging adulthood make it an especially full and intense time of life for many people, these explorations are not always experienced as enjoyable. Explorations in love sometimes result in disappointment, disillusionment, or rejection. Explorations in work sometimes result in a failure to achieve the occupation most desired or in an inability to find work that is satisfying and fulfilling. Explorations in worldviews sometimes lead to rejection of childhood beliefs without the construction of anything more compelling in their place. (p. 474)

With such a degree of upheaval, in particular with regard to identity development, many emerging adults face serious challenges to their resiliency.

Chickering's theory of identity development. Originally proposed in 1969 (and reformatted in 1993), Arthur Chickering's theory of student development has remained central to

our understanding of the fundamental tasks of development during the undergraduate college years. Specifically, Chickering proposed *seven vectors* of identity development: developing competence, managing emotions, moving through autonomy toward independence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. The term *vector* is meant to indicate the "direction" or "magnitude" of development such that, "movement along any one [vector] can occur at different rates and can interact with movement along the others" (Chickering & Reisser, 1993, p. 34). Notably, unlike other theories of development, Chickering's is not a step-by-step process, but rather one that is non-linear. The seven-vector theory of student development identifies that everyone progresses at different rates and in a varying order. In particular, Chickering's work helps us to understand the developmental tasks specific to college students and thus allows us to have a deeper understanding of the challenges this population may face.

College Psychological Services and Resilience

Increased research on and policy regarding resilience has the potential to better inform the college counseling practice (Hartley, 2012). There is a growing demand for psychological services providers in college counseling centers (Benton, Robertson, Tseng, Newton, & Benton, 2003) to address the increasing numbers of students entering college with psychological difficulties (Beamish, 2005; Smith et al., 2007). Mowbray et al. (2006) found that with the increase in students experiencing mental health difficulties, college counseling centers have often been abdicating responsibility for those students due to lack of resources to address them. This, in the shadow of events like the Virginia Tech shooting (Urbinia, 2007) and college campus suicides such as that of Elizabeth Shin in 2000 at that Massachusetts Institute of Technology (Sontag, 2002), has raised questions about how counseling centers on college campuses are

addressing the psychological needs of college students. Some psychologists on college campuses have turned to collaboration with other campus resources "to educate the campus community regarding mental illness and psychological distress" (Nolan, Ford, Kress, Anderson, & Novak, 2005, p. 173 [as cited in Hartley, 2012, p. 38]). According to Steinhardt and Dolbier (2008), "resilience is an asset-based approach that can assist college counselors to support college students' mental health needs and promote academic persistence" (p. 445). In the college student population, Masten (2001) asserts "resilience is based on the belief that all college students can achieve college success by using *protective factors*, defined as the qualities of persons or contexts that predict positive outcomes under high-risk conditions" (from Hartley, 2012, p. 38). What remains are questions regarding whether today's college students are prepared to meet the increasingly high demands and challenges of the college environment, what happens when they are not, and how college counseling centers are prepared to help, including by means of preventative measures.

Park et al. (2012) conducted a study in which three self-regulation abilities were assessed in first-year college students. She notes that the transition to college can be difficult for many (Srivastava, Tamir, McGonigal, John, & Gross, 2009), the students often face an increased academic rigor (Aspinwall & Taylor, 1992; Martijn, Tenbult, Merckelbach, Dreezens, & De Vries, 2002), and that often students struggle to transition and develop new social networks and supports (Wei et al., 2005). For these reasons, students often experience increased levels of depression, stress, and anxiety (Dyson & Renk, 2006) and thus would benefit from heightened resiliency. The three self-regulation abilities Park et al. examines are constructive thinking, emotional regulation, and mastery. Each map onto aspects of resilience as supported by the literature (Epstein & Meier, 1989; Lopes, Salovery, Côté, Beers, & Petty, 2005; Scheuer &

Epstein, 1997; Steunenberg Beekman, Deeg, Bremmer, & Kerkhof, 2007). In particular, Scheuer and Epstein demonstrate an inverse correlation between constructive thinking and depression. Park et al. asserts that development of each of these three skills over time is an important part of positive development in college students. Finally, the authors indicate that "more attention is needed to understand what sorts of characteristics and experiences are associated with those students who grow and develop toward a more mature self-regulatory style and those who do not" (p. 46), indicating a need for additional research in the area of resilience in college students.

Summary

Literature that is essential to the research at hand has been reviewed and summarized. Specifically, definitions of resilience have been explored as well as identifying the working definition of resilience for this study. Tugade and Fredrickson (2004) define resilience as the capacity to move on in a positive way from negative, traumatic, or stressful experiences. This simplistic definition suits the study at hand due to its general understanding of what resilience is, as well as the types of situations in which resilient responses can occur. A history of resilience research was put forth with a focus on the four waves of research outlined by Wright et al. (2013), the research on stress, appraisal, and coping championed by Lazarus and Folkman (1984), and the role of the positive psychology movement in the current construction of resilience (Seligman & Csikszentmihalyi, 2000), including research on positive emotions and negative emotion regulation by Tugade and Fredrickson (2004, 2007).

Given the focus of this study on college students, developmental psychology perspectives were outlined, and in particular the area of emerging adulthood (Arnett, 2000) was explored as was the seven-vector theory of identify development for college students (Chickering & Reisser, 1993). Finally, available research regarding college psychological services and resilience was

presented for its relevance to this study.

What follows is a description of the method used for this study, including a description of participants, a description of the research design, a review of the measures that were used, an outline of data analysis techniques, and a presentation of hypotheses.

Chapter 3: Method

Participants

Participants in this study were students currently enrolled in the undergraduate college of the participating university. The university is a private institution with a liberal arts focus that was founded in 1948 with both graduate and undergraduate programs. The university is located in a city of 61,900 residents in the Boston, Massachusetts metropolitan area. The coeducational undergraduate student population is 3,600, with a 57/43 female to male ratio. The college of arts and sciences (which distinguishes the undergraduate component of the university) offers 43 majors and 46 minors; 90% of students graduate within 6 years. Seventy-three percent of undergraduate students live in university housing and 15% of undergraduates are international students. Students at the participating college were notified of the opportunity to participate in the study through e-mail and were encouraged to participate, while still emphasizing the voluntary nature of participation. I invited the entire undergraduate college population to participate using this method, with the intention of obtaining a minimum sample size of 84 participants in order to detect a medium effect size (alpha = .05). In total, 157 students chose to voluntarily participate in this research. The sampling method was approved by the Institutional Review Board (IRB) at my university as well as that of the participating college.

I have considered what may be gained and lost in sampling at a single college versus sampling at multiple colleges or universities. Unfortunately it was not feasible at the time of study to sample at more than one location. This results in the loss of an opportunity to compare results across contexts, thus what has resulted more closely resembles a case study and therefore has less generalizability across contexts. It is my hope that future studies may be conducted at other colleges and universities such that results may be analyzed in comparison.

Research Design

My primary goal was to examine participants' understanding of the resilience construct as it relates to self-reported resilience and resilience supporting constructs. This was achieved by asking researcher designed questions aimed at determining how each participant understands the concept of resilience, followed by administering a self-report measure designed specifically to assess resilience. Several constructs that have been found to both map onto the larger construct of resilience, as well as be essential characteristics in resilient individuals were also assessed. Specifically the self-regulation abilities of emotion regulation and mastery, as well as dispositional optimism were examined. Additionally, depression, anxiety, and stress were measured, to assess for general mental health and well-being of the participant. Another objective was to examine whether and to what extent demographic items included in the study (e.g., race, gender, class year, current GPA, etc.) interact with each of the measured constructs, with particular interest on effects regarding the individual's understanding of resilience.

This study used survey methodology to address the aforementioned goals and objectives. The survey was considered small-scale, was conducted online, and took an estimated 20-25 minutes to complete. The online survey methodology was used because of its advantageous features, including questionnaire design principles, higher response rates, lower costs, reduced implementation time, and greater access to technology across campus (Evans & Mathur, 2005; Wright, 2005).

Upon beginning the study, participants received a brief description of the study and information about informed consent (Appendix A). Students who wished to continue with participation were directed to a web-based survey where their responses were collected anonymously. Once a student completed the survey, s/he had the option to enter his/her name

into a raffle for a participation incentive in the form of two one-hundred dollar amazon.com gift cards. Prior to the start of this study, the research was subject to Antioch University New England's Institutional Review Board (IRB). Approval of all materials and procedures was garnered prior to any data collection.

Data collection and storage. Each survey was conducted online at the convenience of the participant; data was recorded by and stored on www.surveymonkey.com and was only available to me, via password login. All data was anonymous and completed surveys were deleted from Survey Monkey after the data analysis was performed. All data was preserved confidentially on my password-protected computer for the duration of the study. Participants were welcome to contact me or my supervisor with any questions they had regarding the survey.

Measures

The measures for this study were chosen based on several supporting findings in the literature review. The primary resilience measure was selected due to its ubiquitous use in assessing resilience over the past decade. As outlined below, the measure has been used across a number of contexts and cultures and has generally been found to be both valid and internally consistent. The measures of mastery, emotion regulation, and depression, anxiety and stress have been selected based on their use in a recent study by Park et al. (2012; see literature review), exploring the development of self-regulation abilities in first year college students and that may predict psychological adjustment. Mastery and emotion regulation have each been found to support aspects of psychological resilience (Epstein & Meier, 1989; Lopes et al., 2005; Steunenberg et al. 2007) and thus provide good supporting evidence for results gained from the more direct self-reporting measures of resilience traits and behaviors. Finally the construct of optimism was also assessed to provide additional face validity, as it too has been found to map

on to the resilience construct (Block & Kremen, 1996; Feder et al., 2008) and be an essential characteristic in resilient individuals.

Demographics. Participants were asked to answer questions that assess their gender, age, race, ethnicity, class year, student's current grade point average (GPA), student's average high school GPA, parent's highest level of education, current living arrangements, and family's socioeconomic status (Appendix B). Except for the items assessing the student's age and ethnicity, all questions were multiple-choice and each question assessed by a single item. In the future, if this research were to be done at multiple institutions, items relating to the institution at which the participant is enrolled would also be asked. These will include how many students attend the institution, whether it is public or private, and whether the campus resides in an urban, suburban, or rural area. Each item will be multiple-choice, closed-ended.

Instrumentation. *Conceptual Understanding of Resilience* was assessed using a scale that I developed (CURS; Table 1) following the demographic portion of the survey. The scale consists of 18 questions that have been designed to determine (a) the participant's familiarity with the concept of psychological resilience, (b) his or her current understanding of resilience and its core concepts, (c) the participant's existing knowledge of how one utilizes resilience strategies, and (d) the participant's awareness that resilient thoughts and behaviors can be learned and cultivated. Question 1, "How familiar are you with the concept of psychological resilience?" was developed to assess at face value how well a participant believes s/he understands resilience. It is direct and clear and aims to correlate with results on the rest of the measure that indicate low, moderate, or high conceptual understanding of resilience.

Table 1:

Conceptual Understanding of Resilience Scale (Himmel; 18-items)

1. How familiar are you with the concept of psychological resilience?
    a. I have never heard of psychological resilience or I have heard of it but don't really know what it is.
    b. I have some idea what psychological resilience is, but don't know when or how to use it for myself.
    c. I have a clear idea what psychological resilience is, but I don't think of it as something I use/have.
    d. I can explain what psychological resilience is and I feel that I use it in my life.

2. Resilience is:
    a. The ability to bounce back when things don't go as planned
    b. Convincing yourself that a difficult circumstance isn't as negative as it may seem
    c. A trait that people are able to learn
    d. All of the above

3. Kate is a 13-year-old girl who has frequent arguments with her mother. Kate reports that when she is angry she goes into her room and draws; she says this activity helps to calm her. How would you describe Kate's resilience in this situation?
    a. She is able to recognize and use her strengths to solve problems.
    b. She has limited ability to recognize and use her strengths to solve problems.
    c. She recognizes her strengths, but is not yet able to use them to solve problems.
    d. There is no evidence that Kate is able to recognize and utilize her strengths.

4. Being able to manage one's negative and positive emotions is a central component to being resilient.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

5. Resilience can be described as a way of thinking and behaving such that a person more easily overcomes negative circumstances. This is something that most people can learn how to do better and with more competence.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

table continues

6. Optimism is an important part of resilience.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

7. Heather plays the clarinet. She also sometimes experiences anxiety. Health knows that she can practice deep breathing, similar to how she needs to breathe to play her instrument, to calm her body down when she is experiencing an anxiety attack.
    a. She is able to recognize and use her strengths to solve problems.
    b. She has limited ability to recognize and use her strengths to solve problems.
    c. She recognizes her strengths, but is not yet able to use them to solve problems.
    d. There is no evidence that Heather is able to recognize and utilize her strengths.

8. Self-mastery is a perception that indicates a person's sense of control over life outcomes. How important might self-mastery be in cultivating resilience?
    a. Not at all important
    b. Somewhat important
    c. Important
    d. Highly important

9. Being resilient just means that you always look at the silver-lining and ignore the bad stuff.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

10. If I were more resilient it could help me with:
    a. Success in school
    b. Relationships with friends and family
    c. Navigating my career goals
    d. Managing daily stressors (e.g. getting a flat tire, locking yourself out of your room)
    e. All of the above

11. Feelings of depression, anxiety and stress can often be decreased by resilient ways of thinking and behaving.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

table continues

12. John got his final semester grades back and his got a C in Organic Chemistry I. This grade is not as good as he would like. He knows that he's signed up for Orgo II in the spring. John could withdraw from the class, but he decides that he will get a tutor and that he will organize his study schedule next semester so that he has more time to dedicate to the class. In the spring John gets a B+ in Orgo II.
    a. John is able to recognize and use his strengths to solve problems – what a resilient guy!
    b. He has some ability to recognize and use his strengths to solve problems but he is struggling to use those resilient strategies in this instance.
    c. John recognizes his strengths, but is not yet able to use them to solve problems.
    d. There is no evidence that John is able to recognize and utilize her strengths.

13. Which of these words or phrases most lines up with the word 'resilience'? (choose as many as you think apply)
    a. bounce-back
    b. recovery
    c. denial
    d. health in the face of difficulty
    e. holding it all in
    f. overcoming adversity
    g. none of the above

14. Sam is a freshman in college. He is feeling pretty homesick by the end of fall semester and over winter break he thinks about not going back to school for the spring. After talking with his dad, Sam makes a plan to visit home each month and Skype with his family once a week. He thinks this will help him to feel better and still get used to being far away.
    a. Sam is able to recognize and use his strengths to solve problems.
    b. He has some ability to recognize and use his strengths to solve problems but he is struggling to use those resilient strategies in this instance.
    c. Sam recognizes his strengths, but is not yet able to use them to solve problems.
    d. There is no evidence that Sam is able to recognize and utilize his strengths.

15. Being able to respond quickly to something within a changing environment can be thought of as a resilient style of coping.
    a. Strongly disagree
    b. Disagree
    c. No opinion or Uncertain
    d. Agree
    e. Strongly Agree

table continues

16. Some people find it more difficult than others to adapt to unforeseen circumstances. These people can be thought of as highly resilient.
    a. False
    b. More false than true
    c. In between
    d. More true than false
    e. True

17. Some people thrive on change and the unexpected, and enjoy alteration to their routines. These people can be thought of as having resilient qualities.
    a. False
    b. More false than true
    c. In between
    d. More true than false
    e. True

18. Jane found the transition from high school to college very exciting. Although moving away from home was difficult, she was excited to start college and meet the challenges that came with this change. Jane's parents often describe her as resilient. Do you think Jane's parents have a good understanding of 'resilience'?
    a. Very poor
    b. Poor
    c. Average
    d. Good
    e. Excellent

Question 2, “Resilience is:” offers several suggestions, in layman’s terms, of what may make up resilience. This aims to assess participants’ definitional understanding of what resilience is. Questions 3, 7, 12, and 14 were developed based on several test questions from the Massachusetts Child and Adolescent Needs and Strengths tool (CANS; used for people up to age 22) that are designed to assess resiliency. These original questions were designed to clarify what mental health workers who are using the CANS tool should look for in assessing resiliency. Question 18 is an extension of the style used in questions 3, 7, 12, and 14, but asks participants about a second hand understanding of resilience (whether, based on a vignette, it appears that someone else has a good understanding of resilience).

Questions 4, 6, and 8 are designed with the sub-constructs of emotion regulation, optimism, and self-mastery in mind. Each asks whether said construct is a component of resilience. Questions 5, 9, and 15, offer functional definitions of resilience and ask the participant to what degree they agree or disagree with the definition. Similarly, Questions 16, “some people find it more difficult than others to adapt to unforeseen circumstances. These people can be thought of as highly resilient,” and 17, “some people thrive on change and the unexpected, and enjoy alteration to their routines. These people can be thought of as having resilient qualities,” ask participants how true or false they believe the statements to be and assess an understanding of how resilience may look in others.

Question 10, “if I were more resilient it could help me with:” aims to assess what a participant understands about the aspects of life being more resilient can have an effect on, while Question 11, “feelings of depression, anxiety and stress can often be decreased by resilient ways of thinking and behaving” assesses to what extent a participant believes being more resilient can impact coping. Finally, Question 13, “Which of these words or phrases most lines up with the

word ‘resilience’? (choose as many as you think apply): (a) bounce-back, (b) recovery, (c) denial, (d) health in the face of difficulty, (e) holding it all in, (f) overcoming adversity, or (g) none of the above” is designed to offer several synonyms (as well as theoretical antonyms) for resilience and thus further assess definitional understanding of psychological resilience.

Results of the conceptual understanding of resilience scale were categorized into low, moderate, and high conceptual understanding of resilience and were used in regression analysis to assess for its predictiveness of resiliency as indicated by scores on individual self-report resilience measures.

Resilience was measured using The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). The CD-RISC is a 25 item, 5-point Likert scale with rating responses including: 0 (*not true at all*), 1 (*rarely true*), 2 (*sometimes true*), 3 (*often true*) to 4 (*true nearly all the time*). The CD-RISC measures levels of resilience as well as qualities that help one to cope, adapt, bounce back and even thrive in adversity. These are qualities such as self-efficacy, perseverance, competence, tenacity, feelings of control, perception of meaning, and goal achievement.

Answers from the CR-RISC provide a total resilience score ranging from 1 to100, with a higher score indicating higher levels of resilience. This instrument has been established as a well-validated measure of the resilience construct (Campbell-Sills & Stein, 2007) with sufficiently high reliability scores (Ahern, Kiehl, Sole, & Byers, 2006; Connor & Davidson, 2003; Khoshouei, 2009). The internal consistency of the CD-RISC total score analysis has a Cronbach’s alpha of 0.89 and a test-retest reliability correlation coefficient of 0.87 (Connor & Davidson, 2003). The CD-RISC has been utilized for measuring levels of resilience in various populations and ethnicities and has shown strength in these diverse populations (Brown, 2008;

Khoshouei, 2009; Yu & Zhang, 2007). The CD-RISC has been translated into a number of different languages including: Afrikaans, Chinese, Dutch, Farsi, French, German, Hindi, Italian, Japanese, Kiswahili, Korean, Norwegian, Portuguese, Russian, Spanish and Turkish (Connor Davidson Resilience Scale, 2013).

Norming of the CD-RISC was done by utilizing a multi-study approach that included six groups of individuals. First, a group of adult participants taken from a random sample based on a general US population, referred to as "non help-seeking" by Connor and Davidson (2003) and Davidson and Connor (2009) (Group 1, *n* = 577, mean score 80.7). Group 2, was labeled primary care outpatients (*n* = 139, mean score = 71.8). Group 3 included private practice psychiatric outpatients (*n* = 43; mean score = 68.0). Group 4 derived from generalized anxiety disorder (GAD) study participants (*n* = 25; mean score = 63.4). Finally, groups 5 and 6 consisted of two studies including clients with PTSD (group 5, *n* = 22; mean score = 47.8; Group 6, *n* = 22, mean score = 52.8) (Connor & Davidson, 2003, Connor-Davidson Resilience Scale, 2013).

The items on the CD-RISC used for this research have been modified according to the specifications of Dong, Nelson, Shah-Haque, Khan, & Ablah (2013) for clarity. Wording was changed such that items are presented in the first person. Dong et al. found that, "this change in verbiage prompted readers to identify themselves as the active participants in the various items" and increased reader understanding that "s/he is intended to be the subject performing the action" (p. 13). I asked several test participants which wording felt clearer and thus made these changes accordingly.

Mastery was assessed using Pearlin and Schooler's (1978) Self-Mastery Scale (SMS). Self-mastery is a perception that indicates a person's sense of control over life outcomes. Pearlin and Schooler (1978) defined it as "the extent to which one regards one's life-chances as being

under one's own control in contrast to being fatalistically ruled" (p. 5). The seven items of the SMS are scored on a scale ranging from 0 to 35 using a 5-point Likert scale (0 = *strongly disagree* and 4 = strongly agree). High scores indicate a higher sense of self-mastery. The SMS has demonstrated good psychometric properties (e.g., Younger, Finan, & Zautra 2008) and has had good internal consistency in previous studies (e.g., Park et al., 2012).

Optimism was assessed by the Life Orientation Test – Revised (LOT-R) which measures dispositional optimism (Scheier, Carver, & Bridges, 1994). The measure assess participants' tendency to expect favorable outcomes. Scheier and Carver (1985) assert that optimism is defined as "a favorable attitude or expectation toward future events, irrespective of one's perceived ability to efficaciously engage in goal-oriented situations or control outcomes" (as cited in Majer, Jason, & Olson, 2004, p. 59). The measure consists of 10 items (6 self-report, 4 additional filler items) that are rated using a 5-point Likert scale (0 = *strongly disagree* and 4 = strongly agree), with negatively worded items reverse scored; higher scores indicate higher optimism. The LOT-R has good internal consistency (Cronbach's alpha = .78), and items on the LOT-R have been reported as correlating very high (in the .90s) with the original LOT items (Scheier et al., 1994).

Emotion regulation was assessed using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), which consists of 36-items. The DERS assesses emotion disregulation across six domains: difficulties in engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, lack of emotional clarity, limited access to emotion regulation strategies, and non-acceptance of emotional responses. The six items on impulse control difficulties have been omitted from this questionnaire because I have chosen not to assess this component of emotion regulation. Thus the scale used was 30 items. Items are rated

using a 5-point Likert scale (0 = *almost never (0-10%)* and 4 = almost always (91-100%)) with lower scores indicating higher emotion regulation abilities. Gratz and Roemer (2004) indicate that the DERS has demonstrated high internal consistency, good test–retest reliability, and adequate construct and predictive validity (as cited in Park et al., 2012, p. 42).

Depression, anxiety, and stress were assessed using the Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995). The DASS-21, which consists of 21 items, has three 7-item subscales (for depression, anxiety, and stress, respectively). Respondents are asked to answer each item with respect to the degree that it applied over the past two weeks using a 4-point Likert scale (0 = does not apply and 3 = very much). Antony et al. (1998) have demonstrated that the DASS-21 shows good convergent validity and factor structure (as cited in Park et al., 2012, p. 42).

Finally, two open-ended short answer questions were included regarding the promotion of resilience. These were (a) How could your school help you to become more resilient? (b) Please describe what might help you to use resilient coping strategies more frequently? (Appendix D).

Hypotheses

I hypothesized that participants with a greater conceptual understanding of resilience would garner higher scores on the measures of resilience. I used a regression analysis to determine the most important contributor to resilience among the constructs of conceptual understanding, optimism, mastery, and emotion regulation. As a secondary research question, I evaluated what effect conceptual understanding of resilience has on depression, anxiety, and stress. My hypothesis for this research question was that a higher conceptual understanding of resilience would help protect against depression, anxiety, and stress (as indicated by scores on

the DASS). This was evaluated using a correlation analysis. Finally, I conducted an exploratory analysis using the demographic items from the survey and the outcome measures of conceptual understanding of resilience, resilience, and depression, anxiety, and stress. I hypothesized that the demographic items assessing for grade point average, class year, and age, in particular, would result in a statistically significant relationship with conceptual understanding of resilience.

Data Analysis

Quantitative data gathered from each of the measures was analyzed using Statistical Package for Social Sciences (SPSS) software. To answer the research questions, a regression analysis was utilized (Appendix D). Regression was the preferred method of analysis because the purpose of the study is to identify the predictiveness of conceptual understanding of resilience to scores on self-report scores of resilience. Additionally the predictiveness of the component constructs of mastery, emotion regulation, and optimism were also evaluated. Multiple regression analysis is used when several explanatory variables predict the outcome of a response variable. The function of the analysis is to find which predictor variables explain a significant amount of difference in the response variables. In this case, I was interested in understanding to what significant effect conceptual understanding of resilience predicted resiliency. Secondarily, correlation analysis was used to evaluate the relationship between conceptual understanding of resilience and depression, anxiety and stress, as well as a hypothesized inverse correlation between depression, anxiety and stress, and resilience. The measures of resilience, as well as factors that may encourage or hinder resilience are all measured on a continuous scale.

Chapter 4: Results

The goal of this study was to examine undergraduate students' conceptual understanding of resilience as it may relate to their actual resilience behaviors, as well as several demographic factors. As stated previously, conceptual understanding of resilient thoughts and behaviors, resilience, and depression, anxiety and stress were all measured using survey methodology. Additionally, I chose to question participants about several component parts of resilience, including emotion regulation, optimism, and self-mastery. Demographic questions were also asked of all participants. I hypothesized that students with a greater conceptual understanding of resilience would also demonstrate higher resilience and lower rates of depression, anxiety, and stress. Additionally, I hypothesized that several demographic factors would have a relationship to participants' level of conceptual understanding of resilience, including class year, grade point average, and age. What follows are the findings and data analysis of the survey results.

Demographic Findings

The total number of surveys analyzed was $N = 157$. Each participant was asked to identify gender, race, sexual orientation, class year, highest level of parental education, family financial status, and current living situation (Table 2), as well as age and current grade point average.

Table 2

Demographic Characteristics

Characteristic	Frequency	Percentage
Gender		
Female	127	80.9
Male	20	12.7
Transgender	3	1.9
No response	7	4.5
Race		
White or Caucasian	101	64.3
Black or African American	6	3.8
Hispanic or Latino	12	7.6
Asian or Pacific Islander	25	15.9
Other	7	4.2
No response	13	8.3
Sexual Orientation		
Straight	99	63.1
Mostly Straight	30	19.1
Bisexual	13	8.3
Mostly Gay	3	1.9
Gay	4	2.5
No response	8	5.1
Class Year		
1st year	31	19.8
2nd year	38	24.2
3rd year	40	25.5
4th year	40	25.5
5th year	1	.6

Parental Education		
Less than HS	2	1.3
GED/HS Proficiency	9	5.7
Some College	6	3.8
Associate's Degree	8	5.1
Bachelor's Degree	28	17.8
Some Postgraduate Education w/o Advanced Degree	10	6.4
Advanced Degree	86	54.8
No response	8	5.1
Family Finances		
Very poor, my family struggled to get by each month	5	3.2
Poor, my family often had trouble making ends meet	21	13.4
Average, about the same as most people	49	31.2
Above average, my family did well, but we were not rich	62	39.5
Very wealthy, my family had more money than most people	13	8.3
No response	7	4.5
Current Residence		
Residence hall or otherwise campus affiliated housing	126	80.3
Off-campus housing	22	14.0
Fraternity/sorority housing	0	0
Living at home with family	2	1.3
No response	7	4.5

Of the 157 participants, 127 identified as female, 20 identified as male, and three identified as transgender. Seven participants chose not to indicate a gender. The most common age of participant was 20 years old (Figure 1), with 26.8% of participants, followed by 24.2% and 23.5% identifying as 21 years old and 19 years old respectively. Fourteen point six percent (14.6%) of participants were 18 years old, followed by 4.5% at 22 years old. Finally, there was one participant each at ages 23, 24, and 27 years old and seven participants who did not respond.

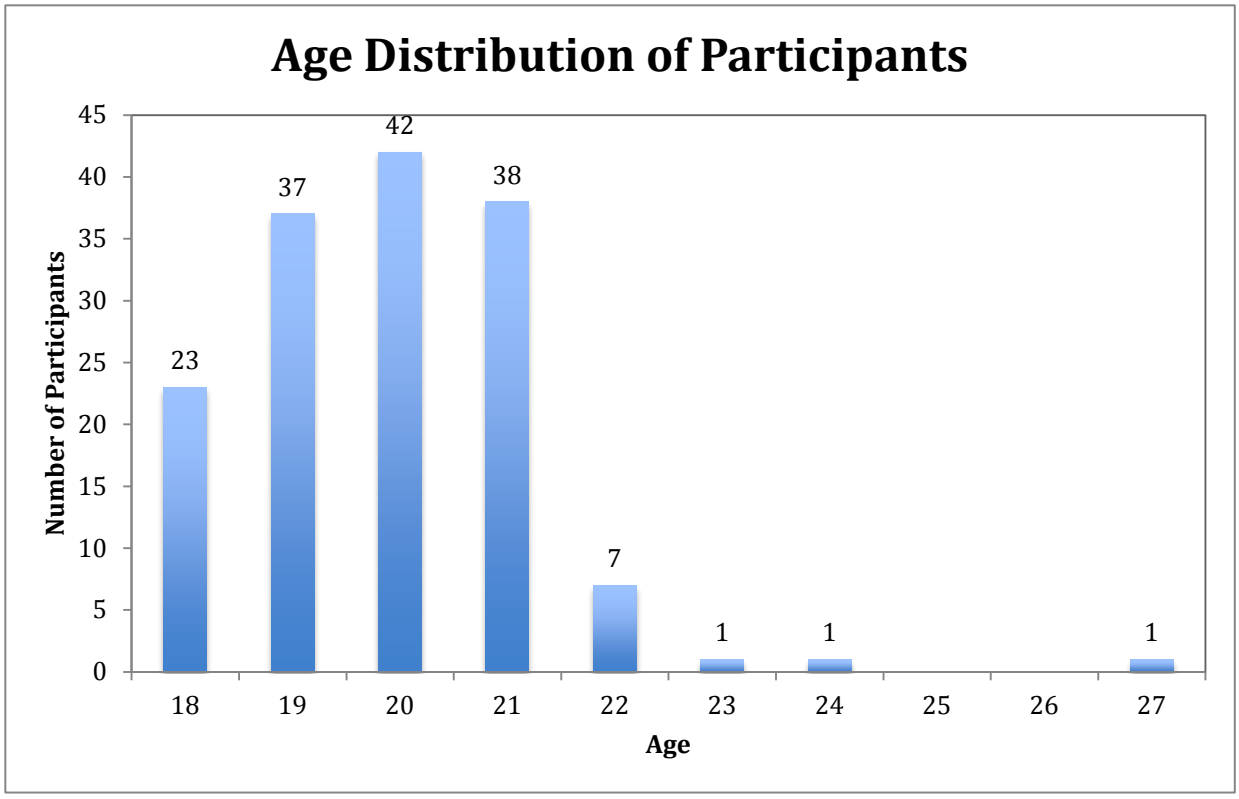

Figure 1: Age Distribution of Participants

The median grade point average was 3.45 (Figure 2). Eleven participants either did not give a GPA or gave a response that did not fit a standard format. Since GPA is a continuous variable, scores were divided into the following groups for clearer graphical representation and categorical understanding: 2.50-2.99, 3.00-3.49, 3.50-3.99, and 4.0. Sixty-one point eight percent (61.8%) of participants reported a GPA in the 3.50-3.99 range, while 22.9%, 5.7%, and 2.5% were in the 3.00-3.49, 4.0, and 2.50-2.99 categories respectively.

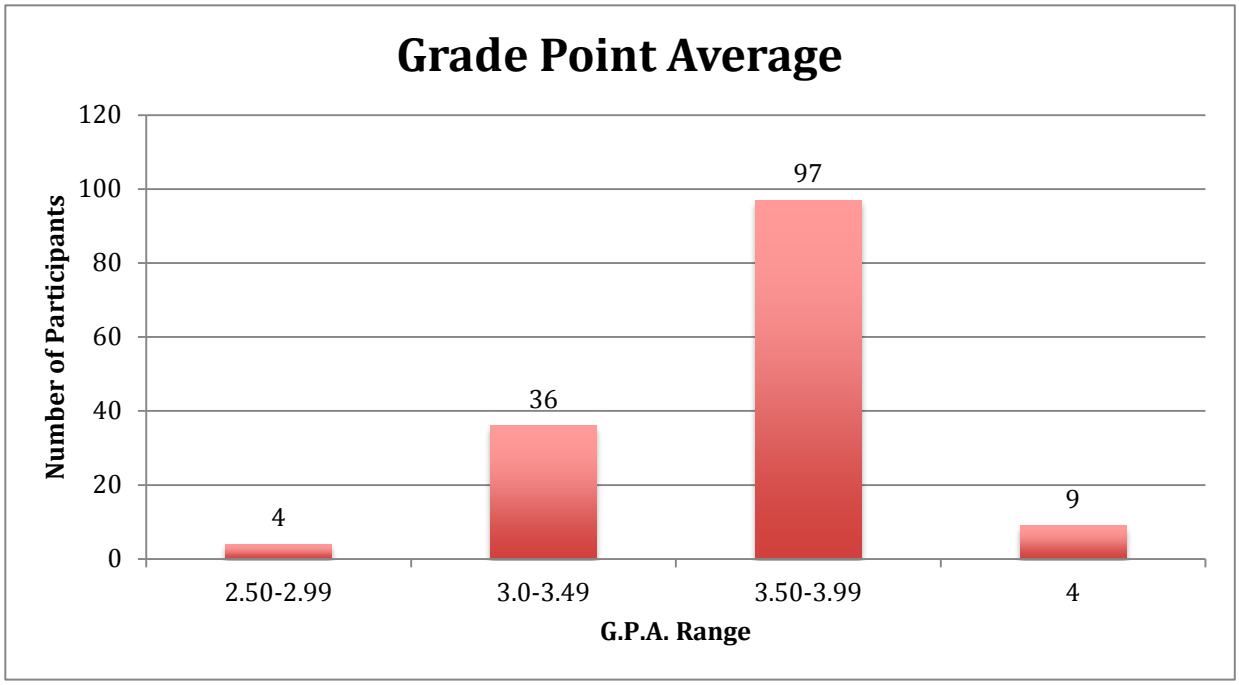

Figure 2: Grade Point Average Distribution

Each participant was asked to identify his or her race and provided four groups along with an *Other* choice. Sixty-four point three percent of participants identified as *white or Caucasian*, 15.9% as *Asian or Pacific Islander*, 7.6% as *Hispanic or Latino*, and 3.8% as *Black or African American*. Four point two percent (4.2%) of participants chose *other* and wrote in a racial identity, while 8.3% percent of participants did not respond. When asked about their sexual orientation, participants were given five options along a modified Kinsey Scale. Sixty-one point three percent (61.3%) identified as *straight*, 19.1% as *mostly straight*, 8.3% as *bisexual*, 2.5% as *gay*, and 1.9% as *mostly gay*, while 5.1% of participants did not respond.

When asked about class year, participants were also asked to identify as either having started in September or January (Table 3). Nineteen point eight percent (19.8%) of participants were 1st year students, 93.5% of whom started in September, while the remaining two 1st year students were mid-year starts. Only a slightly larger percentage (10.5%) of the 2nd, 3rd, 4th, and 5th year participants were also mid-year starters, with the majority, 89.5%, having started school in September. Participants representing the 2nd, 3rd, and 4th year classes were relatively equal, with 24.2%, 25.5% and 25.5% respectively. Finally, there was a single participant who identified as a 5th year student.

Table 3

September or Mid-year Start

Characteristic	Frequency	Percentage
1st year September Start	29	18.5
1st year Mid-year Start	2	1.3
2nd, 3rd, 4th, 5th year September Start	110	56.2
2nd, 3rd, 4th, 5th year Mid-year Start	13	6.6
No response	34	17.4

Participants were also asked several questions about their family of origin, including highest level of parental education and family financial status. The majority of participants indicated that their parents had an advanced degree (54.8%), followed by participants whose parents had a bachelor's degree (17.8%). The remaining participants indicated that their parents had one of the following: some postgraduate work (6.4%), GED/HS proficiency (5.7%), an associate's degree (5.1%), some college (3.8%), or had not completed high school (1.3%). Eight participants (5.1%) did not respond to this question. When asked about family finances, participants were given five qualitative choices from which to choose. The majority of participants (39.5%) chose the option *above average, my family did well, but we were not rich*. This was followed relatively closely by *average, about the same as most people* with 31.2% of participants selecting this choice. Thirteen point four percent (13.4%) and 3.2% indicated the choices of *poor* and *very poor* respectively, while 8.3% indicated that their families had been *very wealthy*. Four point five percent (4.5%) of participants did not answer this question.

Finally, participants were asked to indicate their current living situation while attending university. Students were provided with four choices that most accurately represent the housing options available to students. The large majority of participants (80.3%) indicated that they live in a *residence hall or otherwise campus affiliated housing*. This was followed by 14% of the participants indicating that they live in *off-campus housing*, and 1.3% living at home with family. No participants indicated that they live in *fraternity/sorority housing*. This result could be illustrative of non-official Greek life policy the sample university has, wherein there are no officially sanctioned Greek houses. There are, however, several Greek life groups in existence at the university, some of which have off-campus houses. Four point five percent (4.5%) of participants did not indicate housing.

Conceptual Understanding of Resilience

The primary research question was to assess the relationship between conceptual understanding of resilience and resilient thinking and behaviors. It was expected that greater conceptual understanding of resilience would be correlated with increased resilience. Furthermore, it was hypothesized that there would be a positive predictive relationship between these two variables, when controlling for other variables such as mastery, optimism, and emotion regulation. To assess for conceptual understanding of resilience, participants completed a researcher-designed measure that consisted of eighteen questions (see methods section and Table 1 for further description).

Several items were removed from the Conceptual Understanding of Resilience Scale (CURS) during data analysis due to poor internal consistency reliability (items 3, 7, 9, & 13; Table 1). Once these items were removed there was a Cronbach's alpha of $\alpha = .689$. Participants' scores on the CURS were grouped into low, medium, and high understanding. This provided a normal distribution, with a mean score of 49.59, and a standard deviation of 6.212 (Figure 3). Low scores were those ranging from 0-44, medium were from 45-54, and high understanding scores were 55 and above.

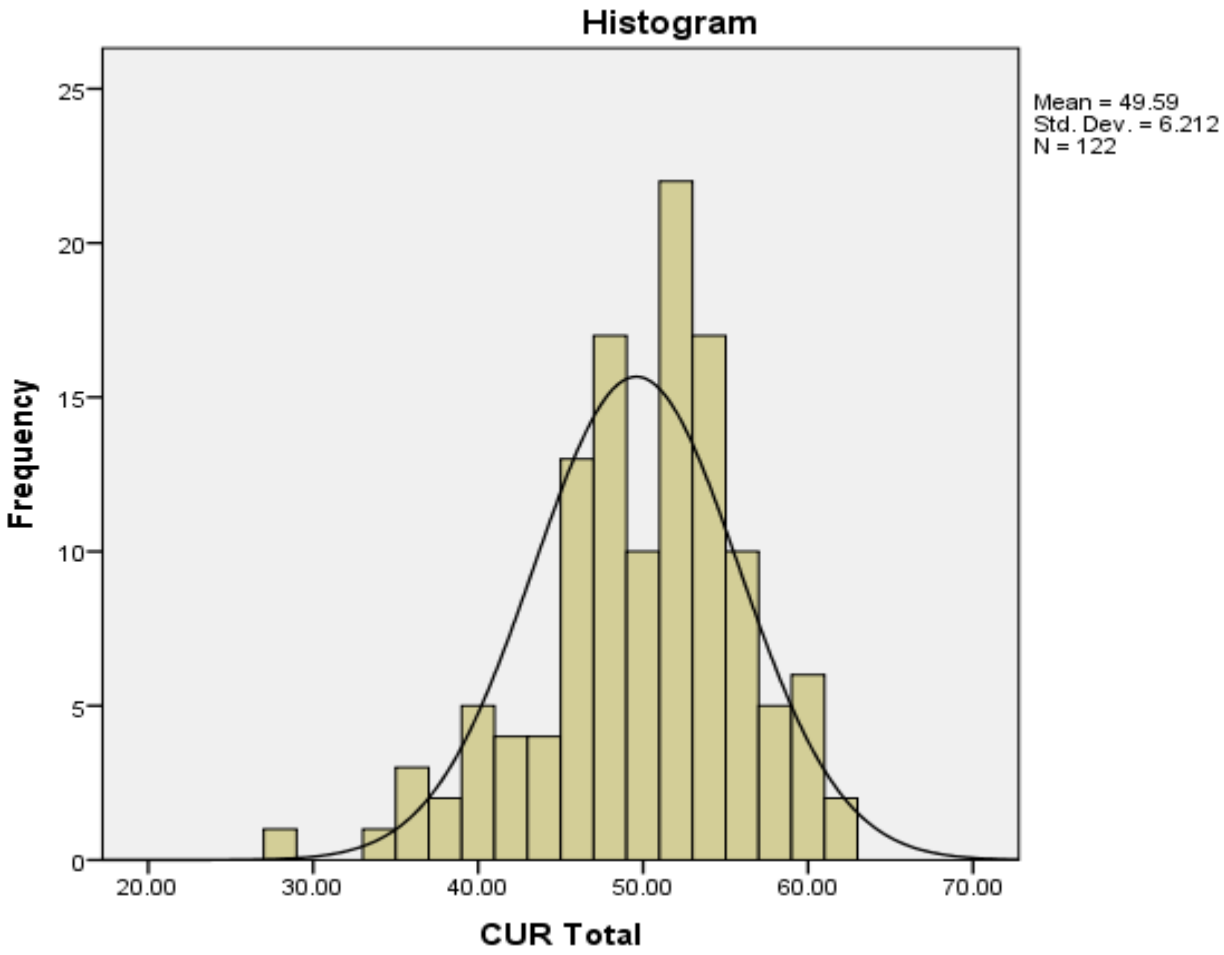

Figure 3: CURS Score Distribution

Resilience Rates

Based on the norms for the CD-RISC, I would predict that students in this study might obtain an average score between 47.8 and 80.7 (see Methods section on the Connor-Davidson Resilience Scale). The mean CD-RISC score in this study was 67.62 (SD = 12.49, n = 115), which, relative to the norming studies, puts the sample group between the "private practice psychiatric outpatients (*n* = 43; mean score = 68.0)" and the group derived from "generalized anxiety disorder (GAD) study participants (*n* = 25; mean score = 63.4)" (again, see Method section of this study). The distribution for resilience scores in this study can be found below (Figure 4). I believe this indicates that the sample represents a relatively normally distributed population of students.

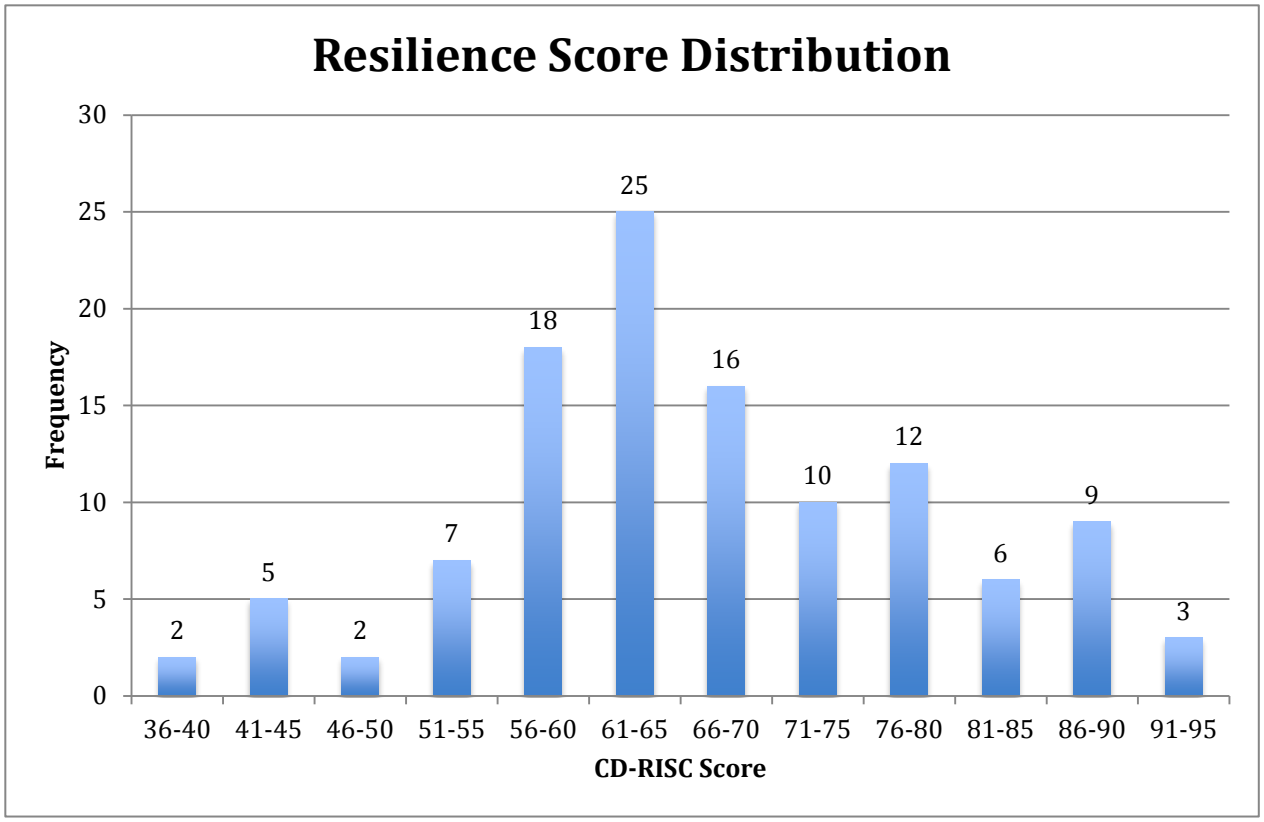

Figure 4. Resilience Score Distribution

Hypothesis Testing

Predictors of resilience. Correlation and multiple regression analyses were conducted to examine the relationship between Connors-Davidson Resilience Scale (CD-RISC) scores and various potential predictors (i.e., Conceptual Understanding of Resilience Scale, Life Orientation Test-Revised, and Self-Mastery Scale scores). Descriptive statistics of the measures are included in Table 4. CURS was significantly positively related to both LOT-R ($r(111) = .306$, $p = .001$) and CD-RISC scores ($r(114) = .244$, $p = .008$). No significant relationship was found with scores on SMS ($r(112) = .032$, $p > .733$). LOT-R was significantly positively related to CD-RISC ($r(111) = .544$, $p < .001$) and SMS ($r(111) = .371$, $p < .001$) and significantly negatively related to Difficulties in emotion Regulation Scale (DERS) ($r(108) = -.327$, $p < .001$) and Depression, Anxiety and Stress Scale (DASS) scores ($r(105) = -.212$, $p = .028$). CD-RISC was significantly positively related to SMS ($r(112) = .282$, $p = .002$) and significantly negatively related to DERS ($r(108) = -.451$, $p < .001$) and DASS scores ($r(105) = -.248$, $p = .01$). SMS was significantly negatively related to DERS ($r(108) = -.396$, $p < .001$) and DASS scores ($r(105) = -.349$, $p < .001$). DERS was significantly positively related to DASS scores ($r(105) = .603$, $p < .001$).

Table 4

Descriptive Statistics

	Mean	Std. Deviation	N
CD- RISC Total	67.62	12.49	113
CURS Total	49.9558	5.94227	113
LOT-R Total	13.8230	3.41538	113
SMS Total	21.7080	3.27240	113

Table 5

Scale Correlations

		CURS Total	LOT-R Total	CD-RISC Total	SMS Total	DERS Total
CURS Total	Pearson Correlation	1	.306**	.244**	.032	-.114
	Sig. (2-tailed)		.001	.008	.733	.235
	N	122	113	116	114	110
LOT-R Total	Pearson Correlation	.306**	1	.544**	.371**	-.327**
	Sig. (2-tailed)	.001		.000	.000	.000
	N	113	113	113	113	110
CD-RISC Total	Pearson Correlation	.244**	.544**	1	.282**	-.451**
	Sig. (2-tailed)	.008	.000		.002	.000
	N	116	113	116	114	110
SMS Total	Pearson Correlation	.032	.371**	.282**	1	-396**
	Sig. (2-tailed)	.733	.000	.002		.000
	N	114	113	114	114	110
DERS Total	Pearson Correlation	-.114	.327**	-.451**	-396**	1
	Sig. (2-tailed)	.235	.000	.000	.000	
	N	110	110	11	11	110
DASS Total	Pearson Correlation	-.135	-.212*	-.248**	-.349**	.603**
	Sig. (2-tailed)	.167	.028	.010	.000	.000
	N	107	107	107	107	107

Note. ** denotes correlation is significant at the 0.01 level (2-tailed). * denotes correlation is significant at the 0.05 level (2-tailed).

A multiple regression was conducted to see if CURS scores predicted CD-RISC scores. The multiple regression model with all three predictors (i.e., CURS, LOT-R, and SMS) produced $R^2 = .315$, $F(3, 109) = 16.735$, $p < .001$ (shown in Tables 6 and 7).

Table 6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5346.100	3	1782.033	16.735	.000[b]
	Residual	11606.962	109	106.486		
	Total	16953.062	112			

Note. Dependent Variable: RISC Total. Predictors: (Constant), SMS Total, CURS Total, LOT-R Total.

Table 7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.562[a]	.315	.297	10.31920	.315	16.735	3

The LOT-R scores had significant positive regression weight ($t(109) = 5.199$, $p < .001$), indicating students with higher scores on this scale were expected to have higher CD-RISC scores, after controlling for the other variables in the model (Table 8). Regression analyses showed that CURS did not significantly predict CD-RISC outcomes ($t(109) = 1.439$, $p = .153$). This indicates that optimism (as measured by LOT-R) is the only construct that predicts resiliency in the present study.

Table 8

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
		B	Std. Error	Beta			Tolerance
1	(Constant)	48.121	10.502		4.582	.000	
	CURS Total	.250	.174	.121	1.439	.153	.893
	LOT-R Total	1.691	.325	.469	5.199	.000	.770
	SMS Total	.381	.323	.101	1.180	.241	.850

Finally, when examining the conceptual understanding of resilience scores by the low, medium and high understanding groupings (0-44, 45-54, and 55+ respectively), I discovered several interesting findings (Table 9). Participants with a higher CURS scores (55 and above) did tend to score higher on the measures of resilience and optimism (CD-RISC and LOT-R), when compared to those in the low (0-44) and medium (45-54) understanding groups. CD-RISC $F(2, 113) = 5.523$, $p = .005$, High understanding > Low understanding (97.35 > 84.72); LOTR $F(2, 110) = 7.712$, $p = .001$, High understanding > Low and Medium understanding (16.05 > 13.54 and 12.17). SMS $F(2, 111) = 3.322$, $p = .040$ showed no post-hoc differences.

Table 9

CURS ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CD-RISC Total	Between Groups	1609.664	2	804.832	5.523	.005
	Within Groups	16466.509	113	145.721		
	Total	18076.172	115			
LOT-R Total	Between Groups	160.657	2	80.328	7.712	.001
	Within Groups	1145.804	110	10.416		
	Total	1306.460	112			
SMS Total	Between Groups	68.966	2	34.483	3.322	.040
	Within Groups	1152.367	111	10.382		
	Total	1221.333	113			
DERS Total	Between Groups	781.509	2	390.755	.973	.381
	Within Groups	42970.864	107	401.597		
	Total	43752.373	109			
DASS Total	Between Groups	221.054	2	110.527	1.007	.369
	Within Groups	11417.488	104	109.784		
	Total	11638.542	106			

The impact of conceptual understanding of resilience on depression, anxiety, and stress. Findings indicate that a conceptual understanding of resilience does not directly relate to experience of depression, anxiety, and stress. No significant relationship was found between CURS, DERS ($r(108) = -.114$, $p > .235$), and DASS ($r(105) = -.135$, $p > .167$). However, CURS was significantly associated with LOT-R and CD-RISC, which both had a significant relationship to DASS scores (see above).

Group differences between demographic items and conceptual understanding of resilience. No significant differences were identified between CD-RISC scores and race ($F(3, 106) = 2.591$, $p = .057$), class year ($F(3, 112) = .154$, $p = .927$), highest level of parental education $F(6, 108) = .905$, $p = .494$, family financial status $F(4, 110) = .493$, $p = .471$, or sexual orientation $F(4, 110) = .780$, $p = .540$. Grade point average and age could not be analyzed in this way because they are continuous variables and so correlations with CD-RISC scores were performed. First year GPA was significantly positively correlated with second year GPA ($r(8) = .723$, $p = .018$), while all other correlations were not significant (Table 10).

Table 10

Demographic Correlations

		Age	GPA (2nd Year+)	GPA (1st Year)	CURS Total
Age	Pearson Correlation	1	-.057	-.101	-.083
	Sig. (2-tailed)		.544	.542	.368
	N	148	115	39	120
GPA (2nd Year+)	Pearson Correlation	-.057	1	.723*	.090
	Sig. (2-tailed)	.544		.018	.379
	N	115	117	10	98
GPA (1st Year)	Pearson Correlation	-.101	.723*	1	.068
	Sig. (2-tailed)	.542	.018		.722
	N	39	10	39	30
CURS Total	Pearson Correlation	-.083	.090	.068	1
	Sig. (2-tailed)	.368	.379	.722	
	N	120	98	30	122
LOT-R Total	Pearson Correlation	-.118	-.003	-.029	.306**
	Sig. (2-tailed)	.219	.981	.884	.001
	N	111	90	28	113
CD-RISC Total	Pearson Correlation	.003	-.092	-.119	.244**
	Sig. (2-tailed)	.974	.384	.540	.008
	N	114	92	29	116
SMS Total	Pearson Correlation	-.113	-.038	-.070	.032
	Sig. (2-tailed)	.236	.721	.723	.733
	N	112	91	28	114
DERS Total	Pearson Correlation	.047	-.099	.045	-.114
	Sig. (2-tailed)	.626	.363	.819	.235
	N	108	87	28	110
DASS Total	Pearson Correlation	-.041	-.034	.170	-.135
	Sig. (2-tailed)	.677	.758	.397	.167
	N	105	85	27	107

Note. ** denotes correlation is significant at the 0.01 level (2-tailed). * denotes correlation is significant at the 0.05 level (2-tailed).

Qualitative Responses

Participants also provided qualitative responses to the following question and prompt regarding the development of resilient coping strategies: How could your school help you to become more resilient? Please describe what might help you to use resilient coping strategies more frequently. The common themes that were raised are included in Tables 11 and 12. The majority of participants in the study noted that increased education and/or workshops on resilience would be beneficial in helping them to use resilient coping strategies more frequently. Additionally, developing and utilizing more self-care strategies (such as yoga, mindfulness, meditation, and time-management) was also a frequent theme. With regard to how the university might contribute to the participant becoming more resilient, students again most frequently mentioned some form of outreach (workshops, flyers, or educational pamphlets), but also very often suggested some form of increased use of the psychological counseling center (more accessibility, increased outreach and collaboration with other parts of school, more support groups offered). In response to both questions there were a small number of responses that indicated that some students either did not understand the concept of resilience or did not think that it was a skill set that could be learned, taught, or fostered by themselves or their university.

Table 11

Qualitative Themes to "Increase Use of Resilient Coping Strategies"

Theme	Frequency
Education/skills/workshops	22
Self-care	20
e.g., yoga, meditation, mindfulness, time management	
Supportive community	16
e.g., friends, family, faculty	
Reminders/Practice	10
Increased self-knowledge	8
Psychological Counseling Center	6
e.g., use and accessibility	
Unsure or don't understand the concept	4
Using resilience strategies fine	3
Nothing	3

Table 12

Qualitative Themes for "How School Could Help You Become More Resilient"

Theme	Frequency
Education e.g., workshops, informational flyers or pamphlets	30
Psychological Counseling Center e.g., more accessibility, increased outreach and collaboration with other parts of school, support groups	25
Self-Care Events e.g., yoga and meditation classes, stress busting events, therapy dogs	15
Advising e.g., having a better advisory program in place, increased support and guidance around workload and time management	10
Nothing and/or I don't want the university to help	9
Consistency in Grading e.g., grade inflation, teachers 'learning on the job', expectations around failure	6
No idea and/or I still don't understand the concept of resilience	3

Chapter 5: Discussion

Resilience has become a growing area of interest in the field of psychology over the last decade and a half. In particular, the increase in emphasis on preventative interventions has necessitated a deeper understanding of psychological resilience and factors surrounding its promotion and development. Concurrently, college and university counseling center use has been increasing, while often financial constraints have been leading to decreased resources. The research outlined here arose out of these contexts.

The central research questions were: (a) What do undergraduate students understand about resilience? (b) What do resilience rates look like in this population? (c) Is there a predictive relationship between what students report about their conceptual understanding of resilience and how resilient they are? With these questions in mind, I have used the definition of resilience outlined by Tugade and Fredrickson (2004) as our guide. They define resilience as the capacity to move on in a positive way from negative, traumatic, or stressful experiences. This study was designed to evaluate the above questions, and a discussion of the findings is presented in this chapter.

Summary of Results

What follows are a summary of the results of this research. The findings from each hypothesis testing are presented, along with a discussion of the demographic and exploratory results. The results of the two qualitative questions are also discussed as they relate to proposed resilience interventions. Finally, the limitations of this study and suggestions for future research are explored.

Relationship of demographic data to conceptual understanding of resilience. Demographic data did not yield any significant differences on CURS scores between groups (i.e.,

participants from a particular demographic group did not reliably get higher conceptual understanding of resilience scores than did participants from another group). Demographic findings are consistent with those reported by the university, indicating that this sample is representative of the population as a whole in these domains.

The impact of conceptual understanding on resilience. When controlling for the impact of emotion regulation, optimism, and self-mastery, conceptual understanding of resilience was not shown to significantly predict resilience. During regression analysis, the only significant finding was that one's optimism can positively predict resilience. The LOT-R scores had significant positive regression weight ($t(109) = 5.199$, $p < .001$), indicating students with higher scores on this scale were expected to have higher resilience scores, after controlling for the other variables in the model (Table 8). Regression analyses showed that conceptual understanding did not significantly predict resilience outcomes ($t(109) = 1.439$, $p = .153$). This indicates that optimism (as measured by LOT-R) is the only construct that predicts resiliency in the present study.

When examining the CURS scores by the low, medium and high understanding groupings, I discovered several interesting findings. Participants with a higher conceptual understanding of resilience did tend to score higher on the measures of both resilience and optimism, when compared to those in the low and medium understanding groups. Given these results, it is possible that the findings indicate that the Conceptual Understanding of Resilience Scale I developed more accurately measures one's understanding of optimism than one's understanding of resilience. Additionally, this could be indicative of an inverse relationship wherein employing greater coping skills leads to and/or correlates with having a greater understanding of the underlying mechanisms at work; hence greater conceptual understanding of

resilience. Finally, as Gordon and Song (1994) remind us, "resilience may not be a single construct, but, a complex of related processes" (p. 30). These findings may be yet another indication of the complexity and interrelatedness of these constructs.

Increasing use and development of resilient coping strategies. Although no predictive relationship was found between conceptual understanding of resilience and one's self-reported employment of resilient coping strategies, the results of the qualitative questions posed to participants indicate a desire for greater conceptual understanding. The majority of participants who answered these open-ended questions noted that increased education, information, and/or workshops on resilience would be beneficial in helping them to use resilient coping strategies more frequently. Some sample responses to the question "please describe what might help you to use resilient coping strategies more frequently?" include: (a) "a workshop or info session on resilience, its benefits, and how to utilize it on a day to day basis," (b) "having a workshop on learning resilience and coping methods," (c) "more awareness of strategies," (d) "more information about them and advice to use them when under stress from advisors and support systems," and (e) "a walkthrough of such practices, a presentation of a variety of strategies." Additionally, many students noted that developing and utilizing more self-care strategies would contribute to being more resilient. Students gave examples such as utilizing yoga, mindfulness, meditation, and time-management. Several sample responses were: (a) "yoga and meditation classes offered more frequently," (b) "Mindfulness practices," (c) "Maybe making a schedule with myself and writing things out," and (d) "Learning relaxation and breathing techniques."

With regard to how the university might contribute to the participant becoming more resilient, students again most frequently mentioned some sort of outreach in the form of

workshops, flyers, or educational pamphlets. Responses were closely tied with those from the previous question, with answers such as: (a) “Workshops,” (b) “Programs about resilience,” (c) “Perhaps they could talk about resilience during orientation and give some strategies to help people practice and improve it,” (d) “more classes and workshops addressing the topic of resilience,” and (e) “Maybe put a small booklet in everyone's mailbox at the beginning of the semester on how to deal with stress or become more resilient.” Students also frequently suggested some form of increased use of the psychological counseling center such as more accessibility to services, increased outreach and collaboration with other parts of school, and more support groups offered. Examples of these responses include: (a) “get [counseling] center more involved with groups and school activities,” (b) “more available counseling, stress-busting activities like laughter yoga or meditation,” (c) “more accessible psychological counseling,” (d) “heighten the amount of free visits to the campus psychologists,” and (e) “maybe hire more people at the [counseling center]? They have too much work and too few psychologists”.

In response to both questions there were a small number of responses that indicated that some students either did not understand the concept of resilience or did not think that it was a skill set that would be learned, taught, or fostered by themselves or their university. Examples of these responses include: (a) “It’s a personality trait, not something that can be helped or not helped,” (b) “I still do not really know what resilient means. I have heard it many times, but never put effort or looked up to see what it actually means,” (c) “I don't really know what classifies as a resilient coping strategy,” and (d) “I think I'm using [resilience strategies] about the right amount, actually. This question implies that individuals should all want to introduce more resilient coping strategies into their lives.”

It was clear in the qualitative responses of the participants that here, as within the field of

psychology, there remains some division on whether or not resilience can be learned and taught, or whether it is solely a personality trait that some people poses while others do not. Overwhelmingly however participants were calling for their university to support their efforts at resilience development by way of offering educational outreach regarding the topic.

Comparison to Prior Research

Measure of resilience. This study used the Connor-Davidson Resilience Scale to assess resilience in the sample population. The 25-item scale measures levels of resilience as well as qualities that help one to cope, adapt, bounce back and even thrive in adversity. These are qualities such as self-efficacy, perseverance, competence, tenacity, feelings of control, perception of meaning, and goal achievement. The instrument has been established as a well validated measure of the resilience construct and has been utilized for measuring levels of resilience in various populations and ethnicities, showing strength in these diverse populations.

Norming of the CD-RISC was done by utilizing a multi-study approach that included six groups of individuals with mean scores ranging from 47.8 to 80.7 (Connor & Davidson, 2003, Connor-Davidson Resilience Scale, 2013). The CD-RISC mean score in the present study is 92.25, (N=113, sd=12.3) as seen in Table 4, indicating a somewhat higher average resilience score in the present sample. Given the focus of the present study on exploring the predictiveness of conceptual understanding on resilience scores, but not discovering such a relationship, I am unable to assess at this time what has caused this higher than average resilience result.

Resilience sub-constructs. Much of this study design was based on the study by Park et al. (2012) in which three self-regulation abilities were assessed in first-year college students. Park noted that the transition to college can be difficult for many, in that students often face an increased academic rigor and struggle to transition and develop new social networks and

supports. Related to this transition, students often experience increased levels of depression, stress, and anxiety and thus would benefit from heightened resiliency. The three self-regulation abilities Park et al. examines are constructive thinking, emotional regulation, and mastery. Each maps onto aspects of resilience as supported by the literature (Deeg, Bremmer, & Kerkhof, 2007; Epstein & Meier, 1989; Lopes, Salovery, Coˆte´, Beers, & Petty, 2005; Scheuer & Epstein, 1997; Steunenberg Beekman et al., 2007). It was for this reason that the present study was designed to incorporate each of those constructs and explores how they relate to conceptual understanding of resilience. Park et al. asserts that development of each of these three skills over time is an important part of positive development in college students, and that "more attention is needed to understand what sorts of characteristics and experiences are associated with those students who grow and develop toward a more mature self-regulatory style and those who do not" (p. 46). The present study was designed to meet this need for additional research in the area of resilience in college students.

The findings here do not indicate that conceptual understanding of resilience is predictive of any of the three sub-constructs of emotion regulation, mastery, or optimism. Rather, the present findings indicate only a predictive relationship between optimism and resilience. This finding could be impacted by a number of factors including study and scale design, limited sampling, and overlap in the constructs evaluated (as described in a previous section).

Implications of Findings

The most significant implication of the findings of the present study is that conceptual understanding alone is not predictive of how resilient one behaves. It is possible that the CUR Scale I designed did not adequately assess the construct of conceptual understanding. Additional research and development with regard to the construct of conceptual understanding of resilience

may still yield interesting findings with regard to predictiveness, though at present the results of this study indicate that the more predictive construct of resilience is one's optimism. A secondary yet significant finding from this study includes that the students sampled seemed to predominantly want increased resilience training and education at their university. This finding has important implications with regard to orientation trainings and preventative care interventions. If students are willing and interested participants in interventions designed to teach resilient coping strategies and promote their usage, it could provide a positive impact on the effectiveness of interventions. Since this study was conducted, I have found several other resources which may help to illustrate what types of interventions may be effective in promoting resilience and optimism in a student population.

At Harvard University the Bureau of Study Counsel (2015) has been working on The Success-Failure Project. Their mission, "is to create opportunities for discussion, reflection, understanding, and creative engagement regarding issues of success and failure." They have collected written and videotaped interviews with faculty and alumni and put them into a collection called "Reflections on Rejections" wherein participants discuss a rejection they have experienced and how it stimulated thoughts on success and/or failure in their lives. The project includes a commencement speech given by comedian (and Harvard University alumnus) Conan O'Brien in 2000. He describes the difficulty he experienced upon graduating from Harvard and managing his expectations for himself, as well as the many rejections and failures he experienced on his way to launching his career. Ultimately he states that his mistakes have been necessary, and goes on to say,

> I have dwelled on my failures today because as graduates of Harvard, you're biggest liability is your need to succeed, your need to always find yourself on the sweet side of

> the bell curve … Each time I have left the cocoon of success it has been bruising and tumultuous, and yet every failure was freeing… and so that's what I wish for you, the bad as well as the good. Fall down, make a mess…know that your mistakes are your own unique way of getting to where you need to be.

The project also includes a written testimonial by Ghazi Kaddouh, a clinical psychologist working in Hong Kong, and former staff member at Harvard. Kaddouh (2015) shares the following:

> I dropped out of college in my third year after failing two classes. I was twenty years old at the time. During my time in the "wilderness," I became a flight attendant, a teacher, and a maitre d'. But quitting my education had left a burning hole in my heart, which motivated me to get back to school. When I decided to go back to school seventeen years later, I went back with a vengeance … I became the best student I could be; graduated valedictorian from junior college, graduated with the highest honors from U.C. Berkeley, and ended up getting a doctorate. I now live the life of a successful and a very content person. If not for that experience many years ago, I might not have been as motivated as I have been to achieve what I have achieved.

What this project helps students to explore are the ways in which success and failure are not diametric opposites, but often complementary experiences. The project urges students to think "beyond the success paradigm" and "to think about your own definitions of success and failure and how those might change over time" (Harvard University the Bureau of Study Counsel, 2015).

One possible intervention born out of this project could be to target these types of conversations toward incoming college students. O'Brian's speech makes perfect sense for the

transition from college to the "real world," but might it also be applicable to the transition *into* college? Might that kind of reframe help students to have not only more realistic expectations of themselves, but also be more resilient when facing difficulties throughout college and emerging adulthood? Based on the findings of this study, namely that optimism plays a large role in one's ability to be resilient, and secondarily that students were eager to learn about coping skills, I believe that these kinds of projects, aimed at incoming students, would be ideal practical interventions. By reframing how we look at failure, we can help students to find new opportunities for growth and change.

Another interesting intervention idea can be found by looking at literature out of the Harvard Business Review. Specifically, in an article titled "Growth after Disaster: Going beyond resilience" by Harvard graduate Shawn Achor (2011), the concept of "falling up" is explored. Before going into great detail, Achor asks his readers to participate in an experiment. He asks that you write down "three of the greatest moments of growth in your life." He goes on to share that:

> Close to 90% of the responses are related to some highly stressful period of change. Many people cite going to college, studying abroad, playing in the finals, quitting a job to find a better one, the birth of a child, even depression. I've never had someone respond that a vacation was one of their greatest moments of growth.

What Achor goes on to explore is called Posttraumatic Growth or PTG. He reminds readers that a trauma itself is never good, but goes on to say that, "Research has illuminated differences between people who experience growth after trauma and those who do not".

Achor (2011) goes on to describe three concrete ways that people can differ in their posttrauma behavior that have an impact on whether or not PTG or "falling up" occurs. He states

that a belief that one's behavior still matters contributes greatly to one's optimism (i.e., making the choice to set aside an extra hour per week of study time after failing a midterm exam). This kind of behavior contributes to a neurobiological sense of empowerment which allows you to keep moving forward. Secondly, Achor notes that PTG is cultivated out of a sense of "deep social support" and that "actively investing in your social support network—rather than passively waiting for that network to invest in you in the midst of hardship" is a key component. Finally, Achor describes how important it is to consider what we tell ourselves about our traumas and failures. He says that people commonly forget about the growth that often comes after a trauma and that impedes their ability to be more cognitively resilience the next time a trauma occurs.

With these three factors in mind, as well as the exercise of writing down three of your greatest moments of growth, a positive intervention for undergraduates can be designed. A resilience workshop might ask students to do the exercise, and then explore the concept of PTG which helps promote wellness and cognitive reframing. With those newly explored concepts in mind, students could be asked to look at their list from the beginning of the workshop and consider what hurdle they likely had to come over in order to experience that growth. Many students at the beginning of their college careers may have less experience in looking back on their live's challenges, this exercise may help to set up a more resilient cognitive strategy earlier.

Finally, an interesting project is being done at the University of Michigan by the Office of the Provost (2015) and is geared toward students traveling abroad. They have created an online resource called Resilient Traveling: Managing stress and enhancing your experience abroad. The site teaches students about resilience by breaking the concept down into a 5-factor model and offering in depth explorations of each factor. The factors explored are connection, optimism, flexible thinking, self-regulation and self-awareness. Additionally, there are videos in

which real students talk about their experiences abroad, struggles they encountered, and moments of resilience. These stories center around four frequently encountered issues for students including loneliness, culture shock, group conflict, and personal struggles. There is also a skills page wherein students can learn about coping techniques such as deep breathing, cognitive diffusion, reflection, and mindfulness.

This website offers a highly accessible way for students (whether abroad or not) to learn about resilience and think about coping skills for difficult situations. An intervention like this could be easily implemented at any university and could be geared toward all students. There is nothing proprietary about the educational content and such an intervention would take relatively few resources to implement. In fact, a project like this one could also be designed as a mentorship experience for upperclassmen to work with incoming students. In this way, the university could foster a sense of reflection and giving back on the part of the mentors, while simultaneously cultivating resilience education earlier in the mentees.

It is my hope that the findings presented in this study will contribute to the growing interest in and development of resilience education programs for emerging adults. The projects outlined in this section are among a few of the interesting and innovative ways interventions for students may be carried out. With increasing emphasis on preventative care and positive psychology, resilience education and training should be at the forefront of university program development. A focus in this area gives students, faculty, and staff alike a chance to feel more empowered and hopeful with regard to managing the future of student mental health.

Limitations of the Study

There are several limitations of this study that may have impacted the breadth and depth of the findings. Firstly, the present study was conducted at a single university, which means that

in some ways the findings may be more similar to those found in a case study design. It would be preferable to have conducted the study at multiple universities, however time and resource constraints limited that possibility. Should future research be conducted in this area, a comparison of results from students across more diverse academic contexts might yield interesting and more generalizable findings.

Additionally, the present study was also limited by time constraints which dictated sampling at a single point in time. I theorize that a longitudinal study design, wherein students could be followed and tested with regard to resilience throughout their time at university, would allow to a greater exploration of the learning and development aspects of resilience. For instance, I am interested in the question of whether resilience may increase over time as a student develops and acclimates to university. Finally, and related to the benefits of a more longitudinal design, the present study could be improved upon by shifting the design to a pre- and post-resilience training intervention sampling. This study design would help to get a better idea of how conceptual understanding of resilience impacts resilient behaviors.

Closing Remarks

This study opens the door to engage in further research in the area of resilience training and intervention at the college and university level. It is my hope that universities may use this study as a resource to help advocate for the development of resilience oriented interventions for their students. Now, more than ever, with increasing use of counseling center resources and decreasing counseling center funding and staffing, students could benefit from preventative care in mental health. Resilience and optimism-focused education can help students foster better coping skills, not only to face the challenges of undergraduate life, but also to face those beyond higher education.

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Appendix A

Informed consent and contract

INFORMED CONSENT FORM

Project Title:	Understanding Resilience in College Students
Principal Investigator:	Jorie Himmel Candidate for Doctoral degree Department of Clinical Psychology Antioch New England Graduate School 40 Avon Street, Keene, NH 03134
Phone:	xxx-xxx-xxxx
E-mail:	jxxxxxx@xxxxx.xxx
Research Advisor:	Roger L. Peterson, Ph.D., ABPP

Thank you for volunteering to participate in this research project seeking to understand how undergraduate college students understand resilience and self-report on their own resilience behaviors. Your signature on this consent form shows that you have been informed about the conditions, risks, and safeguards of this project.

1. Your participation is voluntary. You can withdraw from the study at any time, for any reason, without penalty.
2. There is no more than minimal risk to individuals who participate in this research. The topic of the survey will be on your understanding of resilience concepts and on your resilience behaviors. It is possible that the exploration of your resilience behaviors, coping, and stressors will cause some emotional distress. In such an instance, referral to mental health assistance will be made available.
3. Your complete confidentiality is ensured. Your name will not be requested or used. Instead, data collected here will be given a code number in order to ensure anonymity.
4. Questions about your rights and risk to you because of participation in this study may be addressed to:
   a) The primary researcher at the phone number or e-mail listed at the top of this page,
   b) Dr. George Tremblay, Director of Research, Department of Clinical Psychology, Antioch University New England, 40 Avon Street, Keene, NH 03134. (603) 357-3122, George_Tremblay@antiochne.edu, or
   c) Dr. Don Woodhouse, Chair of the Institutional Review Board for Antioch New England Graduate School, 40 Avon Street, Keene, NH 03134, 603-283-2101, dwoodhouse@antioch.edu

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By checking 'yes' below I acknowledge that I have read the information provided and agree to participate in the questionnaire about resilience. By selecting 'no' you are choosing not to participate at this time.

☐ YES ☐ NO

Appendix B

Demographic Questions

1. What is your gender?
a. Male
b. Female
c. Transgender

2. How old are you?
(open-ended)

3. What is your race?
a. White or Caucasian
b. Black or African American
c. Native American or American Indian
d. Hispanic or Latino
e. Asian/Pacific Islander
f. Other (write in)

4. What is your ethnicity? (this can be your cultural heritage, religious affiliation, etc.)
(open-ended)

5. What is your sexual orientation?
a. straight
b. mostly straight
c. bisexual
d. mostly gay
e. gay

6. What is your current class year?
a. 1st year
b. 2nd year
c. 3rd year
d. 4th year
e. 5th year

7. What is the highest level of education obtained by either PARENT?
(Please enter the highest degree you are sure was obtained.)
a. Less than high school
b. GED/High school proficiency
c. Some college education without degree
d. Associate's degree
e. Bachelor's degree

f. Some post graduate education without advanced degree
g. Advanced degree (Masters, Ph.D., J.D., M.D.)

8. How would you describe your household financial situation as a child?
a. Very poor, my family struggled to get by each month
b. Poor, my family often had trouble making ends meet
c. Average, about the same as most people
d. Above average, my family did well, but we were not rich
e. Very wealthy, my family had more money than most people

9. If a 2nd, 3rd, or 4th year student:
Please estimate your current overall grade point average (GPA).
(open-ended)

10. If a 1st year student:
What was your approximate overall grade point average (GPA) in high school?
(open-ended)

11. Which best describes where you currently live?
a. residence hall or otherwise campus affiliated housing
b. off-campus housing
c. fraternity/sorority housing
d. living at home with family

Appendix C

Promotion of Resilience Exploratory Questions

(1) How could your school help you to become more resilient?

(2) Please describe what might help you to use resilient coping strategies more frequently?

Appendix D

Hypotheses, Variables, and Analyses

Hypothesis	**Variables**	**Analysis**
Higher conceptual understanding is predictive of higher levels of self-reported resilience	CURS, CD-RISC, SMS, LOT-R scores	Regression
Higher conceptual understanding is positively related to higher levels of self-reported resilience (and sub-constructs)	CURS, CD-RISC, SMS, LOT-R, DERS scores	Correlation
Higher conceptual understanding is negatively related to lower levels of depression, anxiety and stress	CURS and DASS scores	Correlation