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Resilience 101: A Resilience Education Intervention for College Freshmen

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Resilience 101: A Resilience Education Intervention for College Freshmen

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Abstract

This evidence-based project sought to evaluate resilience in freshmen college students enrolled in a Bridge scholar program (BSP) in a liberal arts university in the southeastern United States. The American College Health Association (ACHA) found that stress and anxiety were the top two indicators for impacting academics in 2019 and had been at the top since 2009 at the university of study (ACHA, 2019). The study used a pretest and posttest design method with the implementation of a five-week resilience education intervention. There was no significant difference found in students' resilience, health promoting behaviors, anxiety or stress from baseline to two months. However, there was a significant increase in students' knowledge of resilience, stress and anxiety demonstrated from baseline to 2 months supporting the hypothesis ($Z=2.787$, $p=.005$). Results of the data may have been influenced by the current pandemic. Limitations of the study included a small sample size and limited time for the intervention. Future research should focus on a resilience education intervention for all college students, beginning in their freshmen year and continuing throughout their college career in an effort to prevent mental health problems and support student's future well-being.

Keywords: resilience, anxiety, stress, intervention, college students

Resiliency in College Freshmen

Chapter 1: Introduction and Background

The rate of mental health issues in college students is increasing at an alarming rate (Coiro, Bettis, & Compas, 2017; DeConinck, Matthijs, & Luyten, 2019; Dvorakova et al., 2017; Herrero et al., 2019; Houston et al., 2017; Jafari, 2017; Lipson & Eisenberg, 2018). The American College Health Association (2019) found that 87% of college students felt “overwhelmed by all they had to do” in the past year and 54% of students reported anxiety that had affected their academic performance (Coiro, Bettis, & Compas, 2017; Houston et al., 2017). In a large survey of college students (N=25,475) seeking mental health, the Center for Collegiate Mental Health (2015) found the most frequent reported concerns were anxiety (55%), depression (45%) and stress (43%). Academic success is a fundamental goal of a college student, and the inability to manage academic demands increases feelings of anxiety and depression which if not addressed, can lead to suicidal ideation (Jafari, 2017; Lipson & Eisenberg, 2018). First year college students can be vulnerable to stress and adversity due to an unfamiliar environment (Dvorakova et al., 2017; Newcomb-Anjo, Barker, & Howard, 2017; Saleh et al., 2018; Turner, Scott-Young, & Holdsworth, 2017). Academic engagement, mental health and well-being, healthy lifestyle behaviors and academic achievement is connected to resilience which is the approach to this project (Turner, Scott-Young, & Holdsworth, 2017).

Resilience has many definitions throughout the literature. Resilience is the ability to positively adapt in the face of adversity, trauma or stress (Gras et al., 2019; Herrero et al., 2019; Houston et al., 2017; Masten, 2001; Rathore, 2017). Resilience is the capacity of someone to recover in the face of stressful situations (Leppin et al., 2014; Rahat & Ilhan, 2015). Resilience requires an individual to first face a risk and then bounce back from the stressful circumstance

(Masten, 2001; Rahat & Ilhan, 2015; Turner et al., 2017). When the definition of resilience is applied to higher education, it is the student who achieves academic success when faced with non-academic obstacles that could interfere with their ability to achieve and persevere towards completing their degree (Debb, Colson, Hacker, & Park, 2018).

Problem Statement

College represents a change in the lives of adolescents. The transition into adulthood is considered a stress that can lead to an increased risk of developing mental health issues and unhealthy lifestyle behaviors (Dvorakova et al., 2017; Herrero et al., 2019; Saleh, Camart, Sbeira, & Romo, 2018). Because of this, college entry is an important time to establish health behavior practices that will be beneficial for the student, not only during transition into college life, but also for their future (Dalton & Hammen, 2018). Universities face the challenge of facilitating well-being among freshmen to prevent potential mental health problems that could develop in the upcoming college years (Koydemir & Sun-Selisik, 2016). Therefore, a program intended to increase students' resilience as they transition from high school to college is needed to help students establish these necessary healthy lifestyle behavior practices.

Purpose

The purpose of this study is to evaluate an on-line resilience training program intervention, *Resilience 101*, to first semester freshmen enrolled in the university's Bridge Scholars Program (BSP). The goal of the intervention is to promote improved mental health and healthy lifestyle behaviors through resilience as students transition into university life. A resilience training program is a group of interventions that systematically attempt to enhance resilience in individuals and prepare them for future adversity (Leppin et al., 2014; Enrique et al., 2019). Resilience studies should be conducted when risk or adversity actually occurs, which

supports the intervention at the beginning of the freshmen semester when change in the lives of students is considered a stress (Dvorakova et al., 2017; Enrique et al., 2019; Herrero et al., 2019; Jafari, 2017; Masten, 2001; Rahat & Ilhan, 2015; Saleh, Camart, Sbeira, & Romo, 2018).

Specific Aim and Clinical Questions

The specific aim of the study is to evaluate whether an on-line resilience program, *Resilience 101*, is effective in preventing potential mental health problems and supporting healthy lifestyle behaviors for incoming freshmen enrolled in Georgia College and State Universities BSP. This will be accomplished through a three-step process: 1) identify the population for the study and develop a resilience training program for the identified population; 2) measure the populations resilience level, perceived stress, general anxiety, health promoting lifestyles and knowledge with instrumentation as a pre-test prior to implementing the five-week resilience intervention program; and 3) determine the effectiveness of the resilience training intervention with a post-test conducted eight weeks following the five-week resilience intervention program. The clinical questions are as follows:

Following completion of the Resilience 101 education intervention:

1. What effect did the intervention have on BSP student's resilience?
2. What effect did the intervention have on BSP student's anxiety?
3. What effect did the intervention have on BSP student's perceived stress?
4. What effect did the intervention have on BSP student's health promoting lifestyle behaviors?
5. What effect did the intervention have on BSP student's knowledge of resilience, anxiety, stress and health promoting lifestyle behaviors?

Background and Significance

The World Health Organization (1948) defined health as not only the absence of disease, but the state of complete mental, physical and social well-being which showcases the interconnection between mental health and physical health. Mental health focuses on emotions, thoughts and feelings that help in the ability to solve problems and work through difficulties (Centers for Disease Control [CDC], 2018). Physical health gives attention to the proper care of one's body and is affected by lifestyle behavior choices such as diet and physical activity. Poor mental health can negatively impact physical health just as poor physical health can lead to an increased risk of developing mental health problems (Mental Health Foundation, 2016). These concepts solidify the significance behind the proposed DNP project to promote mental health and healthy lifestyle behaviors through a resilience intervention program to college freshmen.

Stress is defined as a normal, non-specific physiological response to everyday pressures and demands, but it can become unhealthy when it alters daily living (American Psychological Association [APA], 2019). Stress is typically caused by an external trigger and can be short-term, such as a school project deadline or relationship problems, or long-term, such as chronic illness or discrimination (APA, 2019). Stress can be perceived as negative or positive. A positive stress may motivate, excite, and improve focus, whereas stress that is high, chronic and/or perceived as negative may have long-term effects on health (Rodriguez, Kozusznik, & Peiro, 2013).

Anxiety, like stress, is an emotional response; however, anxiety brings about feelings of tension, worried thoughts and physical change (APA, 2019). People with anxiety disorders such as generalized anxiety, panic disorders, and phobias usually have repeated intrusive thoughts or concerns and/or excessive worry that will not go away even without a stressor being present

(APA, 2019). Both stress and anxiety can cause mental and physical symptoms such as irritability, anger, fatigue, sleep difficulties, sweating, trembling, dizziness, and elevated heart rate and blood pressure (APA, 2019).

Stress and anxiety are also associated with maladaptive health behavior practices related to lifestyle choices (Dalton & Hammen, 2018). These can include unhealthy eating, sedentary behavior, insufficient sleep, and substance use (Dalton & Hammen, 2018). Transition into college alone can cause young adults to establish unhealthy lifestyle behaviors as well as develop mental health problems due to the new demands they face. These lifestyle patterns adopted at this stage in their life can continue into adulthood and possibly lead to an increased risk of disease (Alzahrani, et al, 2019; Aminisani, et al., 2016).

According to the American College Counseling Association (ACCA) (2017), over the last twenty years, there has been a growing trend of stress in university students. In 2000, sixteen percent of college students sought help for mental health problems, as compared to 44% in 2013 and 52 % in 2014 (Reetz, Krylowicz, & Mistler, 2014). According to Dr. Stephen Wilson, Director of Counseling Services at GCSU, the demand of students seeking treatment at GCSU Counseling Services has risen steadily over the past six years. The number of students receiving treatment at GCSU has increased by 46.1% from 2011 to 2018 with a 51.5% increase in student's seeking treatment in August 2018 compared to August 2017 (Wilson, 2018).

The freshman year of college, as compared to the other years, supports higher levels of ongoing and chronic stress which can lead to poor coping strategies, unhealthy relationships, and a decrease in grades (Dvorakova et al., 2017). Lower academic performance is defined by the American College Health Association National College Health Assessment II (ACHA-NCHA II) as receiving a lower grade on an exam or an important project, receiving a lower grade in a

course, receiving an incomplete or dropping a course, or experiencing a significant disruption in thesis, dissertation, research or practicum work (ACHA, 2019). Lower academic performance affects a student's motivation and self-efficacy that can lead to anxiety and depression (Lipson & Eisenberg, 2018). Further consequences of low academic performance are social disengagement, homesickness, financial burdens, and an overall decrease in interest in long-term objectives such as degree completion (Rahat & Ilhan, 2015).

Because stress is considered normal, the focus of health promotion efforts should not be on the stress itself, but perhaps in how students individually respond to different levels of stress (Rice, 2012). Coping is defined as cognitive and behavioral efforts to control, lessen or endure internal and/or external strains related to stressful situations (Houston et al., 2017; Coiro, Bettis, & Compas, 2017). Behaviors that help promote mental health and well-being and manage stress are described as resilient (Koydemir & Sun-Selisik, 2016). Those who use resilient coping strategies are able to manage stress in a healthy way and can lower unhealthy stress-related symptoms and behaviors (Regehr et al., 2014). Awareness of one's stress levels and recognizing coping strategies are two important steps in promoting resiliency (Regehr et al., 2014).

The American College Health Association National College Health Assessment II (ACHA-NCHA II) is a national survey that assists colleges and universities by collecting data on their campus related to student habits, behaviors, and perceptions on prevalent health topics (ACHA, 2019). According to the ACHA-NCHA II (2019), the top three impacts to academic performance of students at GCSU within the last twelve months was stress (38.4%), anxiety (32.9%) and sleep difficulties (26.8%). Further evaluation of past ACHA-NCHA II reports for GCSU showed stress, anxiety, and sleep difficulties at the top of the list for impacting academics

since 2009. Anxiety and sleep difficulties have doubled in ten years and stress has increased by 14%.

Colleges and universities throughout the United States have developed programs such as a Bridge Scholar Program (BSP) to aid students in transitioning more successfully from high school to college. Traditionally, a BSP targets minority, low-income, underprepared students by providing them with foundational knowledge and skills required for transitional success (Bir & Myrick, 2015; Grace-Odeleye & Santiago, 2019). According to Hali Sofala-Jones, director of the BSP at GCSU, the BSP at GCSU looks quite different than other programs in that, like the student body at GCSU, it is predominantly white with students coming from more economically secure backgrounds. However, the students enrolled are the most academically vulnerable students of the incoming freshmen (GCSU BSP, 2020). They typically fall into one of three groups in order to get a nomination into the BSP: low standardized test scores but high GPA, high standardized test scores but low GPA, or lower GPA/standardized test scores but impressive experiences and recommendations (GCSU BSP, 2020).

Counseling services play an important role on college campuses by being available on-campus and with the use of assertive outreach efforts to prevent mental health problems (Coiro, Bettis, & Compas, 2017). Currently at GCSU, Counseling Services are available to all students to assist with their mental health needs, particularly stress, anxiety and depression. GCSU's Counseling Services employs six full time and two part-time counselors. Counseling services play an important role in supporting student retention and academic performance, and in reducing risk to the university from issues such as student suicide. According to the Director of Counseling Services, Dr. Stephen Wilson, resilience training is incorporated in daily counseling of students; however, it is not offered as a stand-alone program. Although services are available

to prevent mental health issues, university students need a wider variety of social support sources to cope with stress they encounter in their first year (Coiro, Bettis, & Compas, 2017; Rahat & Ilhan, 2015).

Stress reduction training includes resilience and coping strategies that can be taught and reinforced beginning when students enter higher education and continuing through their college career (Turner, Scott-Young, & Holdsworth, 2017). Stress reduction and resiliency and their implications are important for college students, as this is a critical period in students' lives where either mental health issues can arise or health behavior practices are established, each significantly influencing students later in life (Dalton & Hammen, 2018). Identifying the best method to incorporate stress reduction, healthy lifestyle behaviors, and resiliency in the college population needs consideration, and therefore is the focus of this project.

Theoretical Framework

The Transactional Model of Stress and Coping (TMSC) was used as a framework to guide this DNP project towards a solution to the stated problem. Originally proposed by Lazarus and Folkman in 1984, the TMSC is a theory rooted in psychology (Lazarus & Folkman, 1987). The backbone of this model involves a relationship between a person and the environment whereby stressors are identified, appraisals are made, and coping resources are applied in order for adaptation to occur (Etchin, Fonda, McGlinchey, & Howard, 2019; Lazarus & Folkman, 1987). According to Lazarus (1987), personal resilience is valuable as an internal coping resource for minimizing the negative effects of stress. This resilience can potentially lead to maintenance of mental health during times of adversity (Lazarus & Folkman, 1987). The TMSC will help universities such as GCSU to address the challenge of which difficulties facing college

freshmen should be contended with, and how a students' appraisal of their difficulties helps them overcome their distress (Brooker, Brooker, & Lawrence, 2017).

Definitions

In order to better understand the concepts of Lazarus' and Folkman's theory, defining key terms used within the context of the theory will be essential. The following definitions will be used to guide this project:

Transactional- a relationship; the relationship or transaction in the TMSC is that of a person and the environment joined together in a new state and losing their independent abilities (Lazarus & Folkman, 1987).

Well-being- being happy and content; positive psychology that focuses on positive concepts such as resilience and optimism instead of negative concepts (Ercan, 2017; Koydemir & Sun-Selisik, 2016).

Stressor/stress- a stimulus; a response (Etchin, Fonda, McGlinchey, & Howard, 2019); in the TMSC, it is seen as taxing or exceeding one's resources that leads to decreased well-being (Lohacheewa, Sitthimongkol, Sirapo-ngam, & Viwatwongkasem, 2016).

Appraisal- when people evaluate what is happening to them from the stand-point of its significance towards their well-being (Lazarus & Folkman, 1987).

Cognitive appraisal- process of evaluating if an encounter with the environment is relevant to well-being (Etchin, Fonda, McGlinchey, & Howard, 2019; Li & Yang, 2016)

Primary appraisal- first perception or awareness; a person's decision about whether he or she has any stakes in an encounter and if so, what kind (Lazarus & Folkman, 1987)

Secondary appraisal- also known as coping; a cognitive process where action is taken to improve a stressor (Etchin, Fonda, McGlinchey, & Howard, 2019; Lazarus & Folkman, 1987).

Coping- use of resources in an effort to control, lessen or endure internal and/or external strains related to stressors (Coiro, Bettis, & Compas, 2017; Houston et al., 2017).

Adaptation- also known as resilience; a protective resistance against stressors; the outcome of coping efforts (Etchin, Fonda, McGlinchey, & Howard, 2019).

Resilience- often an interaction between individuals and his/her environment (Ercan, 2017); the ability to adapt to life's challenges and maintain a high quality of well-being (Herrero et al., 2019; Leppin et al., 2014).

Identifying Stressors

In the TMSC, Lazarus and Folkman (1987) identify a stressor as a transaction between the person and the environment. Different events in life can be stressors such as illness, loss, trauma, a new school or job, or increase in demands (Leppin et al., 2014). People react differently to stress based on their perception of the stress, the type or character of the stress, and their ability to cope with stress (Etchin, Fonda, McGlinchey, & Howard, 2019). Stressors can disrupt balance and affect a person's well-being (Lazarus & Folkman, 1987). Understanding how people react to stress is related to the timing and duration of the stressful event (Etchin, Fonda, McGlinchey, & Howard, 2019).

Appraisals

There are two types of cognitive appraisals in the TMSC; primary and secondary. The first involves a primary appraisal of stress where there are four different ways to evaluate or appraise a situation (Brooker, Brooker, & Lawrence, 2017). The first type of primary appraisal is considered harmful and occurs if a stress is currently causing a person damage or loss (Lazarus & Folkman, 1987). The second type of primary appraisal is when the anticipation of harm in the future would be considered a threatening situation, but harm has not yet been experienced

(Brooker, Brooker, & Lawrence, 2017). A challenging appraisal, the third type of primary appraisal, involves a person coping with obstacles and having a potential for a positive outcome in the future (Lazarus & Folkman, 1987). Harmful, threatening and challenging appraisal situations requires effort or causes discomfort (Brooker, Brooker, & Lawrence, 2017). In the fourth type of primary appraisal, benefit appraisal, there is no difficulty, no effort required, and no discomfort involved in the evaluation (Lazarus & Folkman, 1987).

After a primary appraisal is made in the TMSC, a secondary appraisal is conducted by the individual. This appraisal requires action to be taken by use of coping resources to control the stress (Etchin, Fonda, McGlinchey, & Howard, 2019). The person must decide if there are actions to be taken to improve the stressful person-environmental relationship, and if so, which coping mechanism may work (Lazarus & Folkman, 1987). Secondary appraisals are important to the primary appraisal because it helps determine how a person can engage with the stressor (Lazarus & Folkman, 1987). If a situation is harmful or threatening, the person may choose avoidance or stagnation; if it is challenging, the person may choose to engage themselves in the situation (Brooker, Brooker, & Lawrence, 2017).

When applying the transactional piece of the TMSC to appraisal, the person changes their appraisal of the situation as their resources or skills change (Brooker, Brooker, & Lawrence, 2017). For example, in college students, their academic ability may seem like a threatening situation, but when they receive feedback from their professor, they change their appraisal to beneficial. Past experiences help to guide future appraisals and help build coping skills or resilience for future encounters (Etchin et al., 2019).

Coping and resources

People interpret and react differently to experiences and have varying individual coping mechanisms. Lazarus and Folkman (1987) concluded in the TMSC that active coping strategies require people to put forth efforts to identify the cause of stressors and discover helpful ways to get rid of them. Coping further involves problem management and regulating emotions and these coping efforts can change depending on the timing, context and character of the stressor (Etchin et al., 2019). Ineffective coping of stress or not having adequate resources to cope can lead to decreased mental and physical health (Leppin et al., 2014).

Cognitive appraisal is important to coping with stress because it influences what coping resource a person will choose (Li & Yang, 2016). Resources for coping can be positive or negative. Coping resources include problem-solving, social support, social skills, positive beliefs and having the ability to find resources with material or financial resources (Etchin et al., 2019). Other coping resources can be health related such as good sleep hygiene, regular exercise, and a well-balanced diet which promote healthy life-style behaviors (Etchin et al., 2019).

Adaptation and Resilience

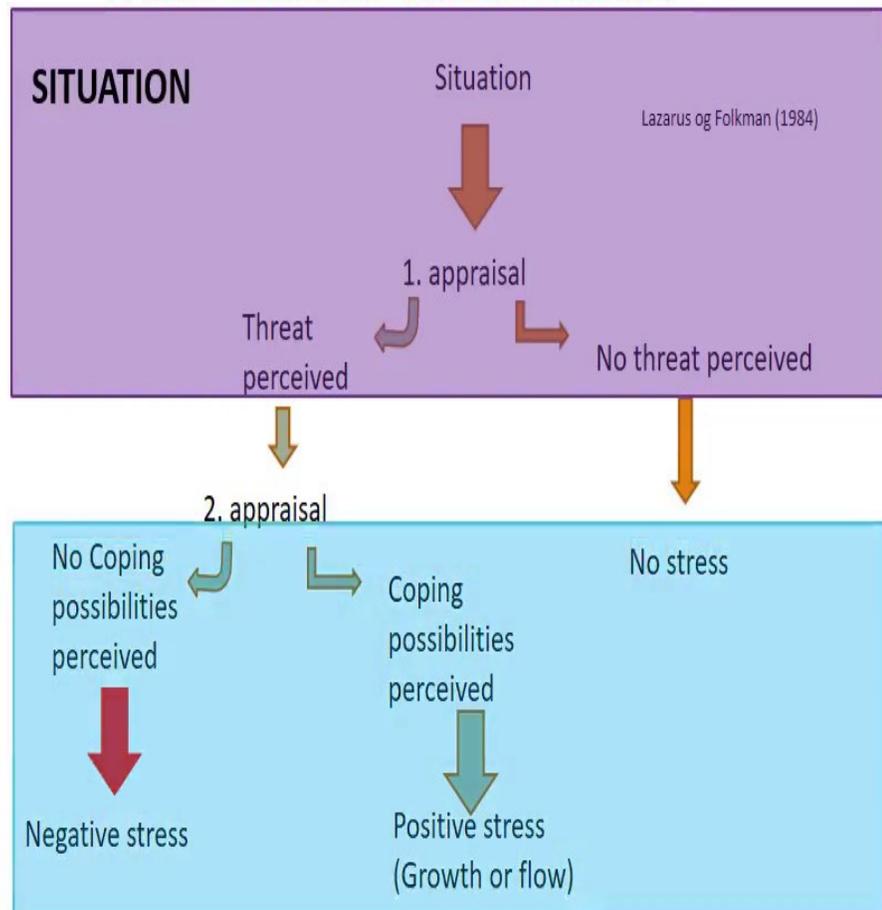
The final phase of the TMSC involves adaptation and resilience to the stressor. The outcome of coping efforts can be both positive and negative and short-term and long-term depending on the context of the stressor and the environment (Etchin et al., 2019). Short-term effects are immediate physiological changes such as emotional well-being and physical functioning (Etchin et al., 2019; Lohacheewa, Sitthimongkol, Sirapo-ngam, & Viwatwongkasem, 2016). Long-term effects focus on somatic health and illness, morale and social functioning (Etchin et al., 2019; Lohacheewa, et al., 2016).

Relevance

Literature often uses resilience, adaptation and coping synonymously as an action and/or outcome to challenging situations or stressors (Etchin et al., 2019). According to the TMSC, resilience is a protective and adaptive resistance from any disruption in function that was caused by the stress appraisals (Steinhardt & Dolbier, 2008). The TMSC by Lazarus and Folkman (1987) is relevant to the DNP project due to the central point of the study being to evaluate if a resilience intervention program would be beneficial to implement at GCSU to incoming freshmen as a way to prevent potential mental health problems and promote healthy life-style behaviors. The hope was to prove what Lazarus and Folkman ultimately determined in their theory, that people who have a conscious awareness of their ability to face problems and tackle them are less likely than others to appraise stressors as threatening, and more likely to experience challenge that will lead to the use of successful coping (Lazarus & Folkman, 1987).



Transactional stress model



Chapter 2: Review of Literature

A review of existing literature was conducted to determine evidence related to stress, anxiety and resilience in college freshmen students. The search was limited to the databases that had the most representation of the key words chosen: CINAHL, Medline, and Psychology and Behavioral Sciences Collection. The initial search strategy involved the key words: resilience/y/t, college students, and anxiety/stress/coping and returned 5,456 articles. The search was extended by combining and adding to the key words: Resilience AND College students OR University students OR Undergraduate students AND stress OR anxiety OR coping. To narrow the search, limitations were used. Databases were searched for journal articles that were peer reviewed, written in English, used human subjects and published between 2014 to 2019 and had the word resilience/y/t in the title. This reduced the number of articles to 537. These articles were reviewed to include a population restricted to undergraduate college students and resiliency with attention given to articles that mentioned stress, anxiety, coping, well-being and interventions. Exclusion criteria included younger students and older graduate students, rehabilitation, mental health issues other than anxiety and stress and other articles that did not pertain to the topic. The screening process led to 38 articles that would be used for the review of literature.

Mental Health in College

Mental health disorders, such as stress, anxiety, and depression, decrease the quality of life of people who suffer from them and increase their vulnerability for developing severe disease (Banos et al., 2017; Herrero et al., 2019; Saleh et al., 2018). The onset of mental health issues often begins in the college years with half of lifetime mental disorders appearing by mid-adolescence and three quarters by the mid-twenties (Herrero et al., 2019; Lipson & Eisenberg,

,2018). Stress, anxiety, and depression are frequent concerns of college students due to exposure to new stressors, thereby increasing their risk for developing mental health problems (Herrero et al., 2019; Saleh et al., 2018). Stress and depressive symptoms are associated with decreased health behaviors such as unhealthy eating, sedentary behavior, insufficient sleep, and substance abuse (Coiro, et al., 2017; Dalton & Hammer, 2018).

The high prevalence of mental health issues in the university population has shown to impair academic performance and can lead to withdrawal (Coiro et al., 2017; Deconick, Matthijs, & Luyten, 2019; Enrique et al., 2019; Lipson & Eisenberg, 2018). These problems can have negative long-term effects on the student and society due to possible future functional impairment (Enrique et al., 2019). Further research indicates that at-risk students such as freshmen, those with low socioeconomic status and those with disabilities have higher stress and anxiety levels than their peers (Rahat & Ilhan, 2016). The literature related to mental health and college students supports the need for an intervention at this transitional time in their lives.

College Role in Mental Health

Entrance into university life is a substantial change in the lives of students and can be a stressor that can heighten the risk of mental health problems (Dvorakova et al., 2017; Herrero et al., 2019; Saleh et al., 2018). University life includes risk factors that is part of the development of an individual's resilient character which can play an important role in adjustment (Rahat & Ilhan, 2016). These findings highlight the importance of having a strategy early in college to enhance coping and resilience to mitigate stress during the freshmen year when risk or adversity actually occurs (Enrique et al., 2019; Jafari, 2017; Rahat & Ilhan, 2016; Robbins, Kaye, & Catling, 2018).

Universities should consider what they can do to make students more resilient during their time at school to foster the development of the whole person as well as academics (Debb et al., 2018; Dvorakova et al., 2017). Resilience is being recognized as essential to helping students manage academic demands to progress towards coping with the pressures of study, work and life (Robbins, Kaye, & Catling, 2018). College is one of the last educational opportunities to change a young adults life course and the educational community has accepted resilience as an essential component for a student to thrive (Dvorakova et al., 2017; Newcomb-Anjo, Barker, & Howard, 2017; Robbins, Kaye, & Catling, 2018). The ultimate goal of college education is to build intelligence and prepare young people to be productive and successful adults; however, students' increased risk of mental health concerns and development of unhealthy lifestyle behaviors can undermine the original purpose of college if not addressed (Brooker, Brooker, & Lawrence, 2017; Dvorakova et al., 2017).

Freshmen Stressors

First year students experience more challenges than other university students due to the difficulty associated with the transition from high school to higher education (Brooker, Brooker, & Lawrence, 2017; Dvorakova et al., 2017; Koydemir & Sun-Selisik, 2016). Further studies indicate that in comparison to other years, freshmen show higher levels of acute and chronic stress resulting in social isolation, loneliness and depression which directly interfere with academics (Dalton & Hammen, 2018; Dvorakova et al., 2017). Due to the first year of higher education presenting challenges for students, the task for universities is to help students overcome difficulties instead of avoiding them (Brooker, Brooker, & Lawrence, 2017).

One of the most common freshmen stressors is adjusting to a different environment or unfamiliar setting than they experienced in high school (Newcomb-Anjo, Barker, & Howard,

2017; Saleh et al., 2018; Turner, Scott-Young, & Holdsworth, 2017). Another challenge during transition into higher education is being an autonomous adult requiring the student to take care of basic needs such as washing clothes and cooking (Coiro et al., 2017; Dalton & Hammen, 2018; DeConinck, Matthijs, & Luyten, 2019; Jafari, 2017). Other freshmen stressors include modifying existing relationships and developing new relationships with roommates, romantic partners, and higher academic standards that require new study patterns (Koydemir & Sun-Selisik, 2015; Newcomb-Anjo, Barker, & Howard, 2017; Rahat & Ilhan, 2016). Financial strains are often encountered due to improper management of money and the burden of student loans (Brooker, Brooker, & Lawrence, 2017; Dalton & Hammen, 2018; DeConinck, Matthijs, & Luyten, 2019; Jafari, 2017).

Navigating unfamiliar university systems and adjusting to university culture can lead to higher levels of chronic stress (Brooker, Brooker, & Lawrence, 2017; Dalton & Hammen, 2018; Dvorakova et al., 2017). Research emphasizes that several undesired outcomes can occur from transition into higher education (Brooker, Brooker, & Lawrence, 2017; Herrero et al., 2019; Rahat & Ilhan, 2016). In an attempt to cope, young adults are more likely to smoke, eat unhealthy food, drink alcohol, and get insufficient sleep in response to stress (Dalton & Hammen, 2018; Herrero et al., 2019). A decrease in physical activity can affect the positive mental health benefits gained from exercise (Jafari, 2017). Overall, freshman challenges can lead to having lower academic achievement, poor coping strategies, and unhealthy relationships intensifying the risk for anxiety, depression and dropping out of school (Dvorakova et al., 2017; Herrero et al., 2019; Rahat & Ilhan, 2016).

Health Promoting Behaviors

Health promoting behaviors are practices that people engage in to help maintain and prevent diseases and is supported by the World Health Organization (WHO) as a key strategy in maintaining quality of life (Bakouei et al., 2018; Roomaney et al., 2017). Research has found the adolescent period is often a time when health-related behaviors are initiated and may continue throughout adulthood (Alzahrani et al., 2019; Aminisani et al., 2016; Bakouei et al., 2018). In university students, this is due to having greater independence, more responsibility for their own health, and more choices over their lifestyle behaviors when they start this new phase of their lives (Al-Qahtani, 2017; Alzahrani et al., 2019). Although they see themselves as healthy and may not be interested in health promoting activities, promoting healthy lifestyle behaviors at this age is important due to the challenge for adults to change unhealthy behaviors later in life (Alzahrani et al., 2019; Aminisani et al., 2016).

Susan Walker, one of the authors of the Health-Promoting Lifestyle Profile, defines health promoting lifestyle as six behavioral categories that encompass spiritual growth, interpersonal relations, nutrition, physical activity, health responsibility, and stress management (Walker et al., 1987). According to Walker (1987), spiritual growth is achieved through transcending beyond ourselves, connecting with the universe, and developing a sense of purpose while working towards goals in life. Interpersonal relations focus is on developing relationships with others through verbal and nonverbal messages (Walker et al., 1987). Nutrition and physical activity involve knowledge of a healthy daily diet and regular participation in moderate activity. Health responsibility entails having an active sense of accountability for one's own well-being, and stress management includes identifying resources to reduce and manage stress (Walker et al., 1987). These six categories of health promoting lifestyle serves to maximize personal fulfilment,

maintain or boost well-being, and enhance self-actualization among individuals (Roomaney et al., 2017; Walker et al., 1987).

Bridge Scholar Program

According to the United States Department of Education (2018), over the last fifty years, nearly half of all students who enrolled in a two- or four-year university withdrew before earning a degree. More universities are seeking to resolve this problem by offering a transitional support program to incoming freshmen. College bridge scholar programs are designed to make the transition into higher education easier by providing academic skills and social resources needed to succeed (Bir & Myrick, 2015; Douglas & Attewell, 2014; Grace-Odeleye & Santiago, 2019). Content among universities BSP vary, but they all have similar goals of helping students gain understanding of the demands of college, increasing academic and social preparedness, and promoting self-efficacy and persistence in an effort to increase the retention to graduate (Bir & Myrick, 2015; Grace-Odeleye & Santiago, 2019).

Fostering engagement with the university experience can be challenging to a vulnerable population of freshmen students. The key feature of a BSP is to create resilience through the development of skills and support networks that academically and socially prepare students for the rigors of college (Bir & Myrick, 2015; Cabrera, Miner, & Milem, 2013; Grace-Odeleye & Santiago, 2019). These networks include orientation to college life with a focus on resources available on campus, academic advising, formation of positive social and peer connections, and faculty and mentor relationships (Bir & Myrick, 2015; Grace-Odeleye & Santiago, 2019). Results for participants in the BSP may be the students increased motivation and belief in their abilities to succeed and willingness to put forth the effort required for academics (Bir & Myrick,

2015). The students in a BSP have a chance to show that they are prepared for college and committed to their own success (Grace-Odeleye & Santiago, 2019).

Stress Reduction and Resilience Interventions

Pandemics, death, and illness are a few examples of challenges that we face in life. Some people handle these stressors with ease whereas others struggle. One person may have the strength to keep their hopes high in extremely difficult times where another may give up in a lesser situation. These differences in character between people is called resilience and is often an interaction between an individual and his/her environment (Ercan, 2017). This is supported by Lazarus and Folkman (1987) in the Transactional Model of Stress and Coping.

According to Masten (2001), resilient people can reach physical, psychological and social balance shortly after a stressful experience (Ercan, 2017). Resilient, stress-reducing behaviors and perspectives influence the stress that individuals experience and can reduce feelings of helplessness (Dalton & Hammen, 2018; Lipson & Eisenberg, 2018). Characteristics of resilient individuals include having good communication, problem solving and organizational skills as well as being optimistic, goal-oriented, and autonomous (Leppin et al., 2014; Li & Yang, 2014; Masten, 2001). Resilient, stress-reducing behaviors contribute to overcoming adjustment issues occurring during transition into university life (Li & Yang, 2014; Lazarus & Folkman, 1987; Rahat & Ilhan, 2016). Resilience may be what separates the student who perseveres four years to complete their degree from one who drops out when faced with adversity (Debb, et al., 2018).

Resilience Training/Interventions

Resilience training programs are a group of interventions that encourage resilient behaviors to prepare individuals or groups for future difficulty (Enrique et al., 2019; Leppin et al., 2014). Based on a systemic review and meta-analysis of randomized trials, resiliency

training programs seem to have modest but consistent benefits in improving mental health and well-being in diverse adult populations (Enrique et al., 2019; Leppin et al., 2014). However, there was a lack of clarity in what defined the resilience programs and lack of a common theoretical approach to the interventions in these studies (Enrique et al., 2019; Leppin et al., 2014). Research further highlights the effectiveness of resilience intervention in college students to significantly reduce anxiety and depression and improve well-being, self-esteem, and hope (Dvorakova et al., 2017; Houston et al., 2017; Robbins, Kaye, & Catling, 2018). Life satisfaction and resilience were also found to have a significant positive relationship in college students (Lipson & Eisenburg, 2018; Rathore, 2017; Robbins, Kaye, & Catling, 2018).

Prevention of mental health problems through the promotion of resilience and well-being is crucial due to the high prevalence of emotional problems in young adults (Enrique et al., 2019; Herrero et al., 2019). This type of preventive strategy focuses on nurturing resilience instead of a problem-focused approach which may be more attractive to the population of college students (Enrique et al., 2019; Herrero et al., 2019). Beginning a preventive intervention during a high-risk period, such as starting college, could reduce the risk of developing stress, anxiety, or other mental disorders (Herrero et al., 2019). Providing resiliency training in college will increase the likelihood of positive academic and employment outcomes in the future (Turner, Scott-Young, & Holdsworth, 2017). Furthermore, intervention effects on depression, anxiety and life-satisfaction play a foundational role in predicting student success and long-term adult outcomes (Enrique et al., 2019).

Internet-based Intervention

The World Health Organization (WHO) found that only 6.7 – 23.1% of college students surveyed received treatment for their mental health issues (Auerbach et al., 2016). These low

treatment rates were due to students reporting their stress was normal for college, not serious enough to be treated, or they did not have enough time to get treatment (Enrique et al., 2019).

This highlights the relevance of interventions that promote resilience for college students when knowing the student's help-seeking behaviors are low (Enrique et al., 2019).

Technology is important in young people's lives; therefore, the information and communication technologies are an excellent means to offer prevention and promotion of positive mental health in college students (Banos et al., 2017; Herrero et al., 2019; Koydemir & Sun-Selisik, 2016). Research found that adolescents use their technology devices for the same amount of time an adult spends daily at work, seven days a week and often on more than one device at the time (Banos et al., 2017). Using technology via the internet and mobile devices could encourage the implementation of preventive resilience interventions by engaging this population in the way they communicate best.

In the past ten years, internet-based interventions have been used to enhance the accessibility and effectiveness of the traditional promotion of mental health (Herrero et al., 2019). This method of intervention has substantial evidence supporting the efficacy for prevention and treatment of mental health disorders such as stress, anxiety, and depression (Banos et al., 2017; Enrique et al., 2019; Herrero et al., 2019). The goals of internet intervention in mental health are similar to that of traditional face-to-face programs. These include reducing the risk of targeted problems such as stress and anxiety, raising the students' level of resilience and well-being, boosting adaptation techniques, and increasing physical activity (Saleh et al., 2018).

Advantages of internet-based interventions for resilience training are being more recognized due to the high rate of accessibility to computers in college students (Banos et al.,

2017; Herrero et al., 2019; Koydemir & Sun-Selisik, 2016). Among the advantages are reaching a wide range of individuals at a low cost, ensuring anonymity, convenience with personalized and interactive feedback, increased availability of services with less wait-time, and no transportation needed (Banos et al., 2017; Enrique et al., 2019; Herrero et al., 2019; Koydemir & Sun-Selisik, 2016; Saleh et al., 2018). Confidentiality is a major advantage to those who do not seek treatment due to the stigma attached to mental health problems (Enrique et al., 2019; Saleh et al., 2018). Undergraduates are immersed in a technical world where they prefer on-line education for learning, relationships, activities, and tasks (Banos et al., 2017; Herrero et al., 2019; Jafari 2017). Because of this, an on-line resilience education intervention may have an advantage over a face-to-face intervention in this population.

Counseling/Community Intervention

On college campuses, counseling services as well as community intervention plays an important role in supporting student's mental health. Counseling services have trained and prepared staff to meet a diverse population with a wide range of concerns that they encounter in college (Coiro et al., 2017; Hartley, 2012; Houston et al. 2017). Both counseling services and community services are a way to offer a supportive and accepting environment for all students. These intervention methods help raise awareness of and support individualized coping techniques as a way of managing stress (Coiro et al., 2017; Houston et al. 2017).

Studies have shown that coping styles, social support, and resilience are important indicators of adjustment to university life (Coiro et al., 2017; Rahat & Ilhan, 2016). Coping styles can be an advantage or disadvantage to the students' ability to acclimate. These styles range from planning, humor, religion, and venting to denial, disengagement, and substance abuse (Coiro et al., 2017; Rahat & Ilhan, 2016). Sources of social support often come from family,

friends and/or a significant other, but may reach further into the community to teachers, neighbors, pastors, and mental health providers (Newcomb-Anjo, Barker, & Howard, 2017; Rahat & Ilhan, 2016; Rathore 2017). University students who reported low social support, compared to those who had an increased social support system, struggled more with transition into college (Newcomb-Anjo, Barker, & Howard, 2017). Social support protects against depression and anxiety in college students through their parental bonds as well as peer and romantic relationships (Newcomb-Anjo, Barker, & Howard, 2017). The value of having personal resilience as an internal resource is seen for decreasing the negative effects of stress and maintaining mental health, especially in times of adversity (Leppin et al., 2014; Saleh et al., 2018).

Policy and Health Intervention

Mental health concerns fall beyond college campus' into state, national and world arenas where initiatives strive to strengthen leadership for mental health and implement strategies to promote and prevent mental health (WHO, 2019). The WHO comprehensive mental health action plan 2013-2020 was adopted by the 66th World Health Assembly (WHO, 2019). The action plan, grounded in human rights, encourages change in the attitudes that generate stigma and discrimination in mental health, and it calls for expansion of services and resources internationally (WHO, 2019).

In a detailed survey conducted by the WHO among college students with mental disorders, it was evident that mental disorders are common around the world (Auerbach et al., 2016). The World Mental Health survey also found that the majority of student's onset of their issue was before enrollment in college, showing an association with failure to enter college and with attrition (Auerbach et al., 2016). According to the WHO, prevention of psychological

problems should focus on the promotion and development of individual resilience and strength in an effort to reduce the vulnerability of this population (Banos et al., 2017).

Synthesis of Evidence

The review of literature produced many ideas and thoughts surrounding the topic of resilience, mental health issues in college students and effective interventions to address these needs. Often by combining diverse concepts into a logical understanding, clarity can be gained on future direction of measures that may benefit college students in gaining resilience as they transition into higher education. Of the thirty-eight articles reviewed, thirty-two were studies conducted on college students reflecting homogeneity, and six studies were specific to freshmen students, which is the focus of the current project (Brooker, Brooker & Lawrence, 2017; Conley, Travers & Bryant, 2013; DeConinck, Matthijs & Luyten, 2019; Dvorakova et al., 2017; Koydemir & Sun-Selisik, 2015; Rahat & Ilhan, 2016). Two of the studies were systemic reviews and meta-analysis of randomized trials indicating the highest level of evidence with the emphasis being on interventions and the efficacy of resiliency training programs (Joyce et al., 2018; Leppin et al., 2014). In addition to the meta-analysis', seven other studies were randomized controlled trials demonstrating further high quality of evidence (Conley, Travers, & Bryant, 2013; Enrique et al., 2019; Gras et al., 2019; Herrero et al; 2019; Houston et al., 2017; Rahat & Ilhan, 2016; Saleh et al., 2018). It was noted that three of the studies conducted were on a specific group of college students which in turn reduces the generalizability of the results (Debb et al., 2018; Gras et al., 2019; Turner, Scott-Young, & Holdsworth, 2017).

The main differences noted in the synthesis of evidence was the type of intervention used to promote resilience, the length of time of the intervention, and the sample size. Interventions encompassed resilience through well-being, mindfulness, and positive psychology although the

bulk of the studies were simply on resilience and coping. There were five studies that utilized internet-based interventions as a way of being more accessible to reaching this population (Banos et al., 2017; Enrique et al., 2019; Herrero et al., 2019; Koydemir & Sun -Selisik, 2015; Saleh et al., 2018). The time frame for the interventions ranged from three weeks to eight months with the majority being eight weeks in length (Dvorakova et al., 2017; Enrique et al., 2019; Herrero et al., 2019; Koydemir & Sun -Selisik, 2015). Sample sizes ranged from thirty students to 3,214.

Similarities and differences were observed in the type of tools used to measure the variables in the studies and which variables were measured. The included studies consisted of the following measures for resilience: Conner Davidson Resilience Scale 25-item and 10- item, the Resilience Scale, the Dispositional Resilience Scale, the Response to Stressful Experiences Scale and the Psychological Resilience Scale in Adults (Ercan, 2017; Joyce et al., 2018). Twelve of the studies applied the Conner Davidson Resilience Scale, showing the most representation. Other common variables measured included stress, anxiety, and depression. These variables were mainly measured with the Perceived Stress Scale, the Generalized Anxiety Disorder Questionnaire and the Patient Health Questionnaire. Less common measures observed were lifestyle behavior, quality/satisfaction of life, self-efficacy, self-esteem, and personality. Fifteen of the thirty-eight studies used three or more tools to access the variables related to resilience.

The Transactional Model of Stress and Coping (TMSC) was the theoretical basis for six of the studies (Brooker, Brooker, & Lawrence, 2017; Li & Yang, 2015; Leppin et al., 2014; Lochacheewa et al., 2016; Saleh et al., 2018; Steinhardt & Dolbier, 2008). Psychology grounded, the TMSC places emphasis on the relationship between an individual and his or her environment (Lazarus & Folkman, 1987). Two other frameworks were suggested through the

literature. One was based on Ann Masten's detailed work with resilience research and the other was a combination of the TMSC with a nursing conceptual model, Neuman's Systems Model to create a new System Theory of Stress, Resilience, and Reintegration (Masten, 2001; Etchin et al., 2019).

Analysis of the findings found that resilience training has a small to moderate effect on improving resilience and other mental health outcomes and may be able to enhance resilient behavior in college students (Leppin et al., 2014; Joyce et al., 2018). Resilience and resilient characteristics were found to be linked to academic persistence, engagement and achievement as well as predicting adjustment to university life (Lipson & Eisenburg, 2018; Rahat & Ilhan, 2016; Turner, Scott-Young, & Holdsworth, 2017). College students showed significantly more hope and less stress and depression after completion of a resilience intervention indicating evidence that this type of intervention can be useful for college students (Coiro, Bettis, & Compas, 2017; Dvorakova et al., 2017; Houston et al., 2017; Ng, Ang, & Ho, 2012). Relationships between resilience and optimism, resilience and life satisfaction and resilience and self-esteem was observed by the students in the intervention studies (Dvorakova et al., 2017; Jafari, 2017; Rahat & Ilhan, 2016; Rathore, 2017, Kaye & Catling, 2018). Daily stress, such as college can bring, and chronic stress were found to be associated with maladaptive lifestyle behaviors encouraging the use of resilience programs as a stress prevention intervention for college students (Dalton, 2018; Saleh et al., 2018; Steinhardt & Dolbier Robbins, 2008). From the analysis of evidence, there is sufficient high-quality evidence to support a resilience intervention program among college students. Further evidence confirms a resilience intervention at the beginning of student's freshmen year when they are at high risk for adversity (Dvorakova et al., 2017; Enrique et al., 2019; Herrero et al., 2019; Jafari, 2017; Masten, 2001; Rahat & Ilhan 2016; Saleh et al.,

2018). Results of studies of the effects of participation in a BSP suggest a positive impact on degree completion and retention (Bir & Myrick, 2015; Douglas & Attewell, 2014; Grace-Odeleye & Santiago, 2019) with suggestions of a pre-test post-test design to determine the effectiveness of a BSP (Grace-Odeleye & Santiago, 2019).

Evidence Strength

The strong attributes of the research are contributed to the two systematic reviews as well as the number of randomized control trials that each produce a high level of evidence-based knowledge. The studies used a variety of measures which helped to reach the diverse college population. The current evidence supports promotion of resilience as an early intervention strategy for those entering the college environment. Strength is seen in the consistency of a large body of literature on a specific topic in a specific population.

Other positive qualities of the evidence include the practical implications for educators and counselors who are invested in the success of college students. The knowledge gained encourages colleges to create change through promotion of resilience interventions. This in turn allows for improvement on past and current research for future benefits to the students and the university. Though the literature varies in an exact protocol for the type of resilience intervention and the length of the intervention, the evidence is in favor of addressing the significant problem of mental health issues in college students through resilience education.

Evidence Limitations

The current studies evaluated have limitations that need to be considered when interpreting the results. Self-reporting, generalization and sample size were three of the most common components that created limits in the reviewed literature. Six of the studies had significantly more females than males who participated. Attrition rates, timing of follow-up or

no follow-up and convenience sampling reduced the strength of the results in various studies. The majority of the studies took place at one university that may not represent an entire university population. Interventions conducted on-line brought about ethical concerns and considerations. Inconsistency was seen in the types and the length of interventions making it difficult to have a set outline for how to conduct a resilience intervention in the future. Despite the limitations, researchers agree of the importance in the role that resilience plays in promoting health and well-being in the college population which ultimately can lead to academic success.

Conclusion

The current evidence and results have implications for health outcomes among college students. The studies contribute to the better understanding and awareness of resilience as a method to prevent and promote positive mental health and support healthy lifestyle behaviors. Future research in the area of resilience training interventions for college students can seek to overcome the limitations and strive to build upon the strengths identified in the current studies. This in turn will create a clear and consistent strategy for creating gold standard resilience intervention programs within universities.

Chapter 3: Methodology

Project Design

The proposed research project used a pretest and posttest design method to determine the effects of a five-week, on-line, synchronous educational intervention in college freshmen enrolled in one universities' Bridge Scholar Program. The educational intervention was a part of an educational program, *Resilience 101*. During the initial session, the baseline (pretest) assessment evaluated participant's resilience, perceived stress, anxiety, health promoting lifestyles, and knowledge prior to the intervention. The assessment was performed again eight weeks after completion of the five-week resilience intervention program (posttest). Both the pretest and posttest used four valid and reliable instruments. Resilience was measured with the Conner-Davidson Resilience (CD-RISC) scale, stress was measured with the Perceived Stress Scale (PSS), anxiety was measured with the Generalized Anxiety Disorder questionnaire (GAD-7), and health promoting lifestyles was measured with the Health Promoting Lifestyle Profile II (HPLP-II). A demographic and knowledge quiz developed by the investigator was used for further descriptive statistics. The Transactional Model for Stress and Coping was the supporting theoretical framework to guide the research project.

Setting

The project site for this study was a public, liberal arts university in the Southeastern United States. The current enrollment for this university for the 2019-2020 academic year was approximately 6,000 undergraduate students with 1,582 of those students being freshmen. The participants in the study were incoming freshmen for the Fall semester of 2020 that have been accepted into the universities' Bridge Scholar Program.

Protection of Human Subjects

Research studies involving human subjects must include a plan of protection for the human subjects. Before the research began, the investigator completed an online training for research ethics. The Institutional Review Board (IRB) at the University then reviewed the proposed project to ensure the participants were protected. The IRB granted approval to proceed with the proposed research project (see Appendix A). All records and data collected during the research were kept confidential by the investigator.

All participants were given oral and written information about the study in-person by the investigator during the introductory session. It was explained that the study involved research and there are no anticipated risks involved in the study. This included no likely burden to the participants while taking the pretest and posttest assessment or during the weekly, on-line educational intervention. However, if the participants experience any undue stress or anxiety from participation, they would be directed to the universities' counseling services, a free, walk-in services available to all university students.

Benefits of the study were to prevent potential mental health problems and promote healthy lifestyle behavior during the transition into secondary education through the resilience educational intervention entitled *Resilience 101*. The benefits could go beyond that of college freshmen enrolled in a Bridge Scholar Program as disclosure of the study may lead to improved resilience for all freshmen, other college students and other populations.

Participants had the opportunity to have any questions regarding the study answered during the introductory session. The investigator had her name and contact information available for future reference. Participants were instructed that the study was voluntary, and they could

withdraw from the study at any time without penalty. It was explained the participants will invest forty-five minutes per week for five weeks, and fifteen minutes to complete the questionnaires each time. The total time burden was four hours and fifteen minutes for the participants.

The investigator obtained two signed copies of the informed consent as an agreement to be in the proposed study (see Appendix B). Participants were given one copy of the consent for their records and the investigator kept the other copy for her records. For all participants under the age of 18, parental consent was obtained in addition to personal assent (see Appendix C). Consents were obtained on-line by the investigator during the introductory session.

Each student participating was assigned a unique number code as an identifier that was used for both pretesting and post testing. The investigator was the only one who had access to the master list of assigned codes. To further protect the participants confidentiality, the investigator kept the master list in a locked file cabinet that only the investigator has access to enter.

Data Security

Data security guaranteed further protection and confidentiality to the participants of the study with proper utilization and storage of research data collected. All paper forms, including the consent forms, were locked in a file cabinet when not in use and only handled by the investigator when in active use for the study. Electronic data was protected by using adequate firewalls, virus protection, and encryption on the investigator's personal computer as a means of preventing confidential data from being stolen. To further secure electronic data, the investigator utilized a password to gain access to the computer and to data. This password was difficult to determine and was not shared.

Destruction of the data after completion of the study was needed for security and IRB purposes. Once the objectives of the project are met, data will be kept secure for three years

according to the IRB guidelines. The investigator will then shred any paper documents, and any electronic files will be permanently deleted.

Sampling Plan

The target sample was incoming freshman students at the public, liberal arts university in the Southeast who were enrolled in the universities Bridge Scholars Program. Data collection was held during the Fall semester of 2020. The sample size was determined by the number of freshmen entering the universities' Bridge Scholars Program (BSP). There were 130 enrolled for the BSP for Fall 2020 and all 130 were recruited. Students were asked to participate by the investigator on-line prior to the first week of the on-line intervention, *Resilience 101*. The recruitment was taken place during the required BSP class, GCSU 1010: Student Success.

The inclusion criteria were incoming freshmen students participating in the BSP. The BSP is for freshmen applicants who show potential for success in college, but who the admissions office feel would benefit from a transitional support program in order to maximize their achievements in college. The investigator chose the BSP population for the educational intervention because both *Resilience 101* and the BSP are similar programs supporting the students' transition into higher education. Further benefits for the BSP participants may be the development of resilient behaviors and skills to help manage stress in a healthy way. This could help support retention and be used throughout the participants college career and in the future.

Exclusion criteria were any other university students, such as other incoming freshmen not participating in the BSP or any existing upper classmen. The exclusion was justified for the purpose of having a specific, defined population and to minimize withdrawal from the study.

Participants were not compensated for participation in the study.

Project Implementation

The on-line, resilience education intervention, *Resilience 101*, used sequential steps to focus on and support incoming college freshmen's resiliency by: 1) discussing stressors in a college campus community; 2) raising awareness of current coping behavior and resilience; and 3) providing strategies for resilience that students may apply to future stressors. Intervention components were delivered in forty-five-minute sessions on-line, once a week for five consecutive weeks.

The topics for the five-week, on-line intervention was determined by the investigator and Dr. Dixie Turner, psychologist at GCSU Counseling Services, and will be as follows:

Week 1 – Introduction to resilience

Week 2- Mindfulness

Week 3- Problem solving

Week 4- Using social support

Week 5- Exercise, diet, and sleep

Data Collection

Data type and source

Primary data was collected by the investigator in order to have specific information on the research project. The investigator used Qualtrics survey tool and questionnaires taken from the CD-RISC, PSS, GAD-7, and the HPLP-II instruments to collect primary data on-line. A brief demographics and knowledge quiz created by the investigator was used. Primary data assessed resilience, stress, anxiety, and health promoting lifestyles as well as knowledge in the selected population of college freshmen. The questionnaires had close-ended questions making it

quick to administer, flexible, and easy to analyze. Through the investigators research, the combined use of the four self-administered questionnaires would fit the study design to measure the participant's overall state of resilience. For the research project, secondary data was not utilized.

Data collection methods

Data was collected at two points during the project. The collection was conducted on-line by the investigator. The first collection was during the introductory session as a pretest assessment. This took place after consent had been received from the participants. Students were given the Qualtrics survey tool questionnaire to complete at the session. The questionnaire combined the four measurement tools to assess the participant's current level of resilience, stress, anxiety, and health promoting lifestyles. There were also demographic questions that was only collected at the beginning of the study in addition to a 15-question knowledge quiz that was collected pre- and post-intervention (see Appendix D & E).

The investigator then completed a second collection of data as a posttest assessment. This took place eight weeks after completion of the five-week educational intervention, *Resilience 101*. This was the same questionnaire that was utilized during week one, with the exception of the demographic data. The second data collection was on-line and used Qualtrics survey tool.

Measurement tools

Threats to internal validity are influences other than the independent variable that could explain the results of the study (Terry, 2018). Bias, confounding and systematic error are a few threats that the investigator considered with the design of the project to minimize these potential effects. The project did risk sampling bias due to the participants being in a specific cohort

(Bridge Scholars program) instead of a random sample of all incoming college freshmen.

However, the investigator felt this is an important population to consider for sustainability of the project. Confounding variables are due to another exposure existing in the study population that is associated with the independent variable. The investigator did not recognize any confounding factors to internal validity. Systemic errors can influence a measurements accuracy and was limited by the investigator by being familiar with the four measurement tools that was used in the study.

Conner-Davidson Resilience Scale

The CD-RISC was used to measure the primary outcome of the study which was resilience (see Appendix F). The CD-RISC is reliable through stability and internal consistency with use of test-retest methods and assessed through Cronbach's alpha coefficient ranging from 0.87 to 0.89 (Conner & Davidson, 2003; Debb et al., 2018; Houston et al., 2017; Rathore et al., 2017; and Robbins & Catling, 2018). In assessing the CD-RISC for validity, construct validity was measured through factorial or structural validity (Conner & Davidson, 2003; Gras et al., 2019). The CD-RISC is a 25-item questionnaire that assesses the participants ability to cope with stress. The CD-RISC can be completed in 5 to 10 minutes by subjects. Each item is rated on a 5-point Likert scale which is an interval/ratio level of measurement. The responses range from not true at all (0), to true nearly all of the time (4), with total scores ranging from 0 to 100 (Gras et al., 2019). Subjects were asked to answer the 25 items based on how they had felt over the last month (Conner & Davidson, 2003). A higher score indicates a higher level of resilience (Gras et al., 2019). The investigator was granted permission to use the CD-RISC by signing an agreement and paying a one-time student fee to Jonathan Davidson, co-author of the CD-RISC (see Appendix G).

Perceived Stress Scale

The PSS was used to measure one of the secondary outcomes of the study, stress (see Appendix H). The PSS is a 10-item questionnaire used to determine if recent life experiences are thought of as stressful by the participant (Cohen et al., 1983). The questions are based on the participant's thoughts and feelings over the last month. The PSS is an interval/ratio level of measurement. It is rated using a 5-point Likert scale ranging from 0 (never) to 4 (very often) where a score between 27 and 40 is perceived as high stress (Cohen et al., 1983). The PSS has been found to have internal consistency with the Cronbach's alpha coefficient of .84 in a recent study of university students (Saleh et al., 2018). The PSS was readily available for use and free to the public.

Generalized Anxiety Disorder Questionnaire

The GAD-7 was used to measure one of the secondary outcomes of the study, anxiety (see Appendix I). The GAD-7 is reliable as shown with internal consistency ($\alpha = .91$) and test-retest reliability as well as convergent, construct, procedural and factorial validity for the assessment of generalized anxiety disorder (GAD) in college populations (Dvorakova, et al., 2017; Herrero et al., 2019, Houston et al., 2017 and Spitzer et al., 2006). The self-administered scale is a quick and efficient instrument for discovering the presence of anxiety and is not a definitive scale for a diagnosis of GAD (Herrero et al., 2019). The GAD-7 is considered an interval/ratio level of measurement. The responses range from not at all (0) to nearly every day (3) with total scores ranging from 0 to 21. Subjects were asked to report how often they have been bothered by each item over the last two weeks. A lower score indicates minimal (0 to 4) to mild (5 to 9) anxiety, whereas a higher score indicates moderate (10 to 14) to serious (14 to 20) anxiety. The GAD-7 was free to use and was readily available to the investigator.

Health Promoting Lifestyles Profile II

The HPLP-II was used to measure health promoting behaviors in the participants (see Appendix J). The HPLP-II is a 52-item questionnaire that is divided into six subscale categories including health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management (Walker et al., 1987). Each behavior is measured with a Likert-type scale ranging from never (1) to routinely (4) with a total score range of 52 to 208 (Alzahrani et al., 2019 and Bakouei et al., 2018). A higher score on the HPLP-II indicates more frequent health promoting behaviors (Alzahrani et al., 2019 and Bakouei et al., 2018). The HPLP-II has been validated with a wide variety of participants and in many countries (Roomaney, EEden, & Kagee, 2017). Cronbach's alpha for the total scale was found to be 0.94 and for the six subscales, it ranged from 0.79 to 0.87 (Alzahrani, et al., 2019, Bakouei, et al., 2018, Roomaney et al., 2017, and Walker et al., 1987). Permission for use of the tool was given by Susan Walker, developer of the HPLP-II.

Data Analysis Plan

The plan for data analysis was devised by the investigator by reviewing the project design as well as identifying the clinical research questions that need to be answered. An a-priori sample size calculator was utilized to determine how many participants were needed to adequately power the study. Based on a medium effect size of 0.5, a desired statistical power level of 0.8, and a probability level of 0.05, one hundred and twenty-eight participants were needed to have sufficient statistical effect. The use of the Statistical Package for Social Sciences (SPSS) version 25 computer program was utilized for data entry for each variable of the study and descriptive statistics was used to analyze the demographic and knowledge characteristics of the sample. Standard data cleaning and testing for normal distribution of the variables was

included in the data analysis. For the data found to be normally distributed, a parametric test in the form of a dependent samples paired T-test was used to determine differences between pretest and posttest scores.

After completion of the *Resiliency 101* education intervention program, the analysis of the data answered the following clinical questions:

Clinical Question 1

What effect did the intervention have on BSP student's resilience?

Clinical Question 2

What effect did the intervention have on BSP student's health promoting lifestyle behaviors?

Clinical Question 3

What effect did the intervention have on BSP student's perceived stress?

Clinical Question 4

What effect did the intervention have on BSP student's anxiety?

Clinical Question 5

What effect did the intervention have on BSP student's knowledge of resilience, anxiety, stress and health promoting lifestyle behaviors?

Chapter 4: Results

Study results will be discussed in this chapter. Reported findings include participant demographics and the effect of an educational intervention on their resilience, health promoting lifestyles, perceived stress, anxiety, and knowledge. Data were entered into SPSS Version 25. Data analysis began with evaluating for missing data and standard data cleaning. Six questions had missing descriptive data that was resolved by mean substitution. Correlations were analyzed for all study variables, and no multicollinearity was found. Distribution of data was assessed for normality with the administration of the appropriate parametric and non-parametric testing.

Sample description

One hundred and thirty freshman students at a public liberal arts university in the southeastern United States who were enrolled in a transitional support program were recruited to participate in this translational research project. Eleven of the 130 students approached were not able to participate due to the COVID-19 pandemic, leaving a starting sample size of 119 freshmen students. Six of the 119 freshmen students did not participate in the posttest due to withdrawal because of illness or grades, leaving a final sample size of 113. Of the initial sample, participants were primarily Caucasian (85.7%, n=102). There were slightly more female participants (56.3%, n=67) than male participants (42.0%, n=50), and two participants (1.7%) did not identify as male or female. Over half of the participants' parents were married (68.1%, n=81), and 40.3% (n=48) of participants' mothers, and 44.5% (n=53) of participants' fathers had a bachelor's degree. The number one source for financing college for participants was from parents or other relatives (58.0%, n=69). The most popular degree sought by participants was business (31.1%, n=37) (see Table 1).

Table 1
Sample Characteristics (N=119)

Variables	N	(%)
Age		
17	2	(107)
18	96	(80.7)
19	21	(17.6)
Gender		
Female	50	(56.3)
Male	67	(42.0)
Other	2	(1.7)
Race/ethnicity		
Caucasian	102	(85.7)
African American	4	(3.4)
Latino/Hispanic	6	(5.0)
Asian/Pacific	3	(2.5)
Two or more	3	(2.5)
Other	1	(.8)
Type degree seeking		
Public Health	2	(1.7)
Psychology	10	(8.4)
Business	37	(31.1)
Computer Science	3	(2.5)
Education	12	(10.1)
Health-related field	14	(11.8)
Music	1	(.8)
Liberal studies	1	(.8)
History	2	(1.7)
Undecided	10	(8.4)
Other	27	(22.7)
Parental Marital Status		
Married	81	(68.1)
Divorced	20	(16.8)
Other	18	(15.1)
Father's Education Level		
Some high school	4	(3.4)
High school	15	(12.6)
Some college	9	(7.6)
Associate degree	7	(5.9)

Bachelor's degree	53	(44.5)
Master's/higher	27	(22.7)
Trade school	2	(1.7)
Not sure	2	(1.7)
Mother's Education Level		
Some high school	1	(.8)
High school	12	(10.1)
Some college	14	(11.8)
Associate degree	11	(9.2)
Bachelor's degree	48	(40.3)
Master's/higher	31	(26.1)
Not sure	2	(1.7)
Sources for financing college		
Personal loan	21	(17.6)
Scholarship	14	(11.8)
Government/free	6	(5.0)
Self-financing	4	(3.4)
Parents/relative	69	(58.0)
Other	5	(4.2)

Instrument Characteristics

Total scores were computed for each instrument, and after reviewing all interval and ratio level data for central tendencies, the Perceived Stress Scale (PSS), Generalized Anxiety Disorder (GAD-7) scale, and Knowledge Quiz scores were not normally distributed for the pretest or posttest. All remaining scores in the Conner-Davidson Resilience Scale (CD-RISC) and Health-Promoting Lifestyle Profile (HPLP-II) for the pretest and posttest were normally distributed and met the assumptions of all parametric statistical analyses used to answer the clinical research questions. Cronbach's alpha for the pretest and posttest CD-RISC sample was an acceptable 0.91 and 0.94 (Conner & Davidson, 2003). Cronbach's alpha for the pretest and posttest HPLP-II was an acceptable 0.94 and 0.95 (Alzahrani et al., 2019 and Bakouei et al., 2018). Cronbach's alpha for the pretest and posttest PSS was 0.48 and 0.59 indicating a less reliable scale.

Cronbach's alpha for the pretest and posttest GAD-7 was an acceptable 0.91 (Dvorakova, et al., 2017). Cronbach's alpha for the pretest and posttest Knowledge Quiz was 0.72 and 0.54, indicating a less reliable scale.

The mean score for the CD-RISC was 72.4 pretest intervention and 72.9 posttest intervention, indicating no change in participants' resilience. The mean score for the HPLP-II was 143.2 pretest intervention and 144.0 posttest intervention, indicating no significant change in participants' health promoting lifestyle behaviors. The mean score for the PSS was 22.2 pretest intervention and 22.8 posttest intervention, indicating no significant change in participants' perceived stress. The mean score for the GAD-7 was 6.8 pretest intervention and 6.4 posttest intervention, indicating no significant change in participants' anxiety. The mean score for the KQ was 9.9 pretest intervention and 11.0 posttest intervention indicating a significant change in the participants knowledge of resilience, health promoting behaviors lifestyle behaviors, stress, and anxiety.

See Table 2 for pretest and posttest descriptive statistics, observed ranges and possible ranges, and Cronbach's alpha for each instrument.

Table 2
*Descriptive Statistics and Cronbach's Alpha for Variables at Pre-Test Intervention (T1) and Post-Test Intervention (T2)**

<i>Variable</i>	<i>M</i>	<i>(SD)</i>	<i>Observed Range</i>	<i>Possible Range</i>	<i>Cronbach's Alpha</i>
CD-RISC					
(T1)	72.36	(12.64)	41-100	0-100	.91
(T2)	72.89	(14.33)	35-100	0-100	.94
HPLP-II					
(T1)	143.24	(22.44)	92-207	52-208	.94
(T2)	143.97	(24.45)	92-208	52-208	.95
PSS					
(T1)	22.24	(3.96)	3-34	0-40	.48
(T2)	22.80	(4.26)	0-35	0-40	.59

GAD-7					
(T1)	6.84	(5.63)	0-21	0-21	.91
(T2)	6.41	(5.13)	0-21	0-21	.91
KQ					
(T1)	9.85	(3.01)	1-15	0-15	.72
(T2)	10.93	(2.08)	4-15	0-15	.54

*N for T1= 119. N for T2= 113.

Clinical Questions

Clinical Question 1: What effect did the *Resilience 101* education intervention have on freshmen student's resilience?

A dependent samples *t*-test was used to test the hypothesis that freshmen students receiving a five-week resilience education program would have increased resilience from baseline to two months following the intervention. The research hypothesis was not supported. There was no significant difference in resilience demonstrated from baseline (M 72.9, SD 14.3) to two months (M 72.9, SD 12.5) $t(112)=.000, p=1.000$.

Clinical Question 2: What effect did the education intervention have freshmen student's health promoting lifestyle behaviors?

A dependent samples *t*-test was used to test the hypothesis that freshmen students receiving a five-week resilience education program would have increased health promoting lifestyle behaviors from baseline to two months following the intervention. The research hypothesis was not supported. There was no significant difference in resilience demonstrated from baseline (M 144.0, SD 24.5) to two months (M 143.6, SD 22.5) $t(112)=.111, p=.912$.

Clinical Question 3: What effect did the education intervention have on freshmen student's perceived stress?

In this analysis, the research hypothesis was tested that freshmen students receiving a five-week resilience education program would have decreased stress from baseline to two months following the intervention. The Perceived Stress Scale (PSS) Fisher's exact score for skewness was 3.05 and the kurtosis was 3.05 in the pretest. Further examination revealed one participant's score was more than three standard deviations below the mean. When the outlier was removed, the data was normally distributed with a Fisher's exact score of 1.31 for skewness and .79 for kurtosis (Sylvia & Terhaar, 2018). However, in the posttest, the PSS Fisher's exact score for skewness was 5.18 and kurtosis was 3.91. and removing the four outliers that were more than three standard deviations below the mean was not sufficient to create a normal distribution. Due to this, a Wilcoxon Signed Ranks test was used to test the hypothesis. The research hypothesis was not supported. There was no significant difference in stress reported from baseline (M 22.2, SD 4.0) to two months (M 22.8, SD 4.3), ($Z = -1.443, p = .149$).

Clinical Question 4: What effect did the education intervention have on freshmen students' anxiety?

In this analysis, the research hypothesis was tested that freshmen students receiving a five-week resilience education program would have decreased anxiety from baseline to two months following the intervention. In the GAD-7 pretest, Fisher's exact for skewness was 2.95 and kurtosis was 1.05. Further examination found that nineteen participants ranked themselves as zero on the scale, which is within the parameters of the instrument, not producing any outliers. The Q-Q plot and box plot were normally distributed; therefore, this variable was treated as nearly normally distributed even though the skewness was 2.95. However, in the GAD-7 posttest, Fisher's exact for skewness was 3.56 and kurtosis was .701. After removing three outliers from the posttest, the data was still not normally distributed. Because the GAD-7 was not normally distributed, a

Wilcoxon Signed Ranks test was used to test the hypothesis. The research hypothesis was not supported. There was no significant difference in anxiety reported from baseline (M 6.8, SD 5.6) to two months (M 6.4, SD 5.1), ($Z=-.191, p=.848$).

Clinical Question 5: What effect did the education intervention have on freshmen students' knowledge of resilience, anxiety, stress, and health promoting lifestyle behaviors?

In this analysis, the research hypothesis was tested that freshmen students would have increased knowledge of resilience, anxiety, stress, and health promoting lifestyle behaviors from baseline to two months following the intervention. In the Knowledge Quiz pretest, Fisher's exact for skewness was 3.94 and kurtosis was .739. In the posttest, Fisher's exact for skewness was 3.10 and kurtosis was 1.17. Numerous outliers were identified with attempts to remove those less than 4 and then those less than 3, however, too many participants were lost; therefore, no outliers were removed. An attempt was then made to transform using inverse natural logarithm, but this only improved the skewness moderately; therefore, the variable was treated as non-normally distributed. Because the Knowledge Quiz was not normally distributed, a Wilcoxon Signed Ranks test was used to test the hypothesis. The research hypothesis was supported. An examination of changes in score rankings indicated participants reported significantly greater knowledge of resilience, anxiety, stress and health promoting lifestyle behaviors. There was significant improvement in knowledge from baseline (M 9.9, SD 2.1) to two months (M 10.9, SD 2.1), ($Z=2.787, p=.005$).

When comparing individual items pretest and posttest for the Knowledge Quiz, the percentage of participants who answered each item correctly increased with all but three of the items (see Table 3). The percentage decrease among those items (items 1, 6 & 14) indicates the participants did not understand the material presented in regard to these particular items.

Table 3*KQ Items and Percentage of Participants Answering Each Item Correctly at Pretest and Posttest*

Item	Pretest		Posttest	
	%	n	%	n
1.What is resilience?	81.5	97	77.9	88
2.Which of the following can help someone become more resilient?	64.7	77	75.2	85
3.Which action would a resilient person take if they made a mistake?	81.5	97	91.2	103
4.All of the following are an example of dealing with conflict and compromise, EXCEPT:	63.0	75	69.9	79
5.Midfulness teaches you to be aware of your feeling and _____.	73.9	88	88.8	95
6.Mindfulness helps with stress by _____.	56.3	67	43.4	49
7.Which of these is an example of social support?	80.7	96	93.8	106
8.While at college, where would you NOT go for social support?	70.6	84	77.9	88
9.An example of good _____ health is getting 8 hours of sleep.	40.3	48	54.9	62
10.Opening your mind to new ways of doing things can improve your _____.	59.7	71	74.3	84
11.The life skill that helps you deal with problems and emotions in an effective way is _____.	52.1	62	58.0	65
12.Which of these is cardiovascular exercise?	67.2	80	82.3	93
13.What is the most important meal of the day?	83.2	99	98.2	111
14.Which of the following can result from NOT getting enough sleep?	21.0	25	8.0	9
15.Which of the following is a benefit to physical activity?	89.1	106	98.2	111

Miscellaneous Findings

A few significant findings were discovered from data analysis that were not specifically addressed by the clinical research questions. For example, a Pearson's analysis revealed a significant positive relationship between days of week participants get outside to exercise and pretest resilience, $r(119) = .27, p = .003$, and a small to medium positive correlation between days of week participants get outside to exercise and pretest health promoting lifestyle behaviors, $r(119) = .43, p = .000$. Participants who report higher numbers for exercise are significantly more likely to report significantly higher levels of resilience and higher levels of health promoting lifestyle behaviors (see Table 4).

Pearson's analysis revealed significant but small positive relationships between days of week participants get seven hours of sleep or more and pretest resilience, $r(119) = .21, p = .020$, and pretest health promoting lifestyle behaviors, $r(119) = .19, p = .043$. Participants who report higher numbers for sleep per week were significantly more likely to report higher levels of resilience and higher levels of health promoting behaviors. There was no significant relationship between pretest and posttest resilience and health promoting behaviors and the number of days participants ate fast food.

Spearman's rho indicated a significant negative relationship between days of week participants get seven hours of sleep or more and pretest anxiety, $r_s(119) = -.23, p = .012$. Participants who report more hours of sleep per week were significantly more likely to report lower levels of anxiety. There was no significance between pretest and posttest perceived stress or knowledge and the number of days of week for outside exercise or days of week eating fast food.

Table 4
Pearson's Analysis

Variable	Pretest	Posttest	Pretest	Posttest
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	CD-RISC	CD-RISC	HPLP-II	HPLP-II
Days of week for outside exercise	.003*	.371	.000**	.275
Days of week of getting 7 hours of sleep or more	.020*	.079	.043*	.209
Days of week eating fast food	.726	.657	.173	.357

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

Conclusion

The educational intervention, *Resilience 101*, had no effect on resilience, healthy lifestyle behaviors, stress, or anxiety from baseline to two months. However, there was a significant improvement in participants' knowledge of resilience, healthy lifestyle behaviors, stress, and anxiety from baseline to two months. Additionally, participants' exercise and sleep habits were noted to have positive, significant correlations with their resilience. There was also a negative significant correlation between amount of sleep and participant's anxiety level.

Chapter 5: Discussion

A discussion of findings from this study will be examined in this chapter. The effect of an on-line resilience program, *Resilience 101*, on prevention of potential mental health problems and supporting healthy lifestyle behaviors for incoming freshmen enrolled in GCSU's BSP is presented. A review of students' demographic characteristics is included. Study strengths and limitations are also discussed as are the implications to future research.

This project demonstrated the implementation of a resiliency program designed to promote resilience while providing additional data to existing literature related to the topic. In an effort to show the potential of such an intervention, the identified populations resilience, health promoting lifestyle behaviors, perceived stress, general anxiety, and knowledge levels were measured with a pre-test. The effectiveness of the intervention was determined with a post-test conducted eight weeks following the five-week resilience program.

According to the research, resilience training programs seem to have modest but consistent benefits in improving mental health and well-being (Enrique et al., 2019) which were similar to the results found in this study. The current findings of this study suggest there were no significant improvements in the participants resilience, health-promoting lifestyle behaviors, perceived stress or anxiety; however, there was a significant improvement in the participants knowledge of the topics.

Participant demographics in this study were mostly Caucasian (n=113, 85.1%). These demographics were similar to those reported by the ACHA conducted at the university in 2019 (Caucasian: 87%). All participant demographics were freshmen with an average age of eighteen years. Fifty-five percent of participants identified as female and 42 percent identified as male.

The gender of the demographics of this study was evenly distributed due to the selection into the universities BSP. The current gender demographics at the university is 77.9% female and 19.8% male. It was noted that 18.3% of participants got two days of outdoor exercise per week, 33.3% of participants ate fast food three days per week, and 24.2% of participants got five to seven hour of sleep per week. The results gave the researcher an indication of the participants healthy lifestyle behaviors.

Strengths and Limitations

The major strength of this study was the use of an on-line intervention program. Research found that among the population of study, internet-based intervention promotes the accessibility and enhances the effectiveness of mental health interventions (Enrique et al., 2019; Saleh et al., 2018). An on-line intervention allows for an increase in types of services offered with decreased wait times as well as reduced stigma attached to receiving mental health help in the college population (Enrique et al., 2019; Saleh et al., 2018). In the current study, the on-line resilience education intervention was advantageous due to the inability to conduct face-to-face intervention. Another strength of this study was the use of a preventive strategy of intervention that focused on nurturing resilience instead of a problem-focused approach which may be more attractive to the population of college students (Enrique et al., 2019; Herrero et al., 2019). A further strength of the study was the resilience education intervention being incorporated within a required course offering which increased the likelihood of attendance.

A final strength was the use of the Transactional Model of Stress and Coping (TMSC) as a theoretical framework to guide the study. The foundation of the theory created by Lazarus and Folkman (1987) is based on people identifying stressors and learning to cope through resilience and adaptation. The strategy of the TMSC can lead to decreasing the negative effects of stress

such as the mental health challenges that face college students (Etchin et al., 2019). The education intervention utilized in this study followed the guidelines of the theory by helping the students identify their stressors, evaluate, or appraise their situation, and provide resource options to help them cope with their stressors. These interventions included mindfulness, problem-solving, use of social support, and education on the benefits of exercise, diet, and sleep to support resilience.

Limitations of the study that may have an impact on the significance of the data were numerous. The world-wide Covid-19 pandemic may have had a direct impact on the research project as a whole. The first impact was felt when implementation of the research intervention and data collection was postponed for a semester due to shifting of college courses on-line during quarantine. The investigator then had to create an on-line version for consents, survey collection, and the educational intervention due to the BSP not being offered face-to-face.

The second impact of the pandemic was the uncertainty of whether the BSP was going to be offered due to the pandemic. The Bridge Scholar program (BSP) is typically held during the Summer semester for five weeks which was not possible due to the pandemic. After much thought and deliberation on if, and when the BSP would be offered, the university made the decision to conduct the BSP program in the Fall. This required the curriculum for the BSP as well as the educational intervention for the project to be completely remodeled due to having a 15-week semester for both interventional programs.

Although the intervention of resilience was chosen before the pandemic, the third impact was the effect the pandemic may have had on the college students' resilience, mental health, and health promoting lifestyle behaviors. Without a pandemic, freshmen are already considered a vulnerable population with the normal stressors of entering college. The incoming freshmen had

already shown exceptional resilience on making it to college during a pandemic. Due to Covid-19 restrictions, they had endured finishing high school with less than normal events such as proms, sports, and graduation, and perhaps had seen family members suffer or die from the virus. These negative effects of the Covid-19 outbreak continued to impact their journey towards higher education. Stressors identified among the students included fear and worry of their health and their families' health, difficulty concentrating, disruption of sleep, decreased social interaction due to physical distancing, and increased concerns of academic performance, all of which increased their stress and anxiety (Son et al, 2020).

The impact of the pandemic did not go unnoticed on the mental health status of many college students. Six months after the pandemic began in the United States, \$11.5 million was made available through the Governors Emergency Education Relief (GEER) to address mental health concerns across the University System of Georgia (USG). Understanding the preliminary recommendations from the USG Mental Health Task Force concerning counseling centers waiting list and the need for establishing long-term strategic planning for mental health, the University System Office (USO) entered partnerships with Christie Campus Health and the JED Foundation. An immediate need for clinical support began in January of 2021 that was provided by Christie Campus Health through their [Connect@College](#) program. This outreach offers telephonic psychiatric care, increased clinical support capacity for the university counseling center, a well-being support program, and a 24/7 hotline for mental health concerns and issues. The JED Foundation's role in the partnership is to provide short- and long-term strategies to support mental health and well-being needs unique to the university campus of study. This emergency education relief to aid in mental health expresses the direct impact the pandemic had on the mental health status of college students in Georgia including those in the study.

Other limitations of the study included a small sample size ($n=113$) which reduced the power and generalizability in the study. The small convenience sample was recruited from one liberal arts university in the south eastern United States, and it is not clear if these results would generalize to other types of colleges. The study was further restricted using only freshmen students enrolled in the universities' BSP. Duration of the intervention was limited to five weeks in order to have a posttest follow-up before the end of the semester. Finally, survey exhaustion was noted in posttest surveys as evident by the participants completing the survey in less than half of the expected time of the pretest surveys. This could be avoided by not conducting the posttest during the final week of the semester and having fewer than five surveys to complete.

Future Research Implications

This study has added to the on-going research into supporting college students with a resilience education intervention at a time in their lives when it could be most impactful. Incorporation of a resilience education intervention in each phase of a students' college career could provide lasting effects and improved results in building resilience and health promoting lifestyle behaviors while reducing stress and anxiety. This more long-term, structured environment could be accomplished by recruiting various departments of the university to support the efforts of resilience training, particularly in areas such as counseling services, student health, and the wellness division. Future research in resilience education interventions would benefit from a long-term follow-up to determine the retention of the intervention on mental health and well-being throughout the entire freshmen year and possible throughout the students four years in college. The development of resilience is enhanced by practice and experiences over time (Robbins & Catling, 2018). In this study, it is possible that additional time following interventions may result in significant improvement in students' lifestyle and behaviors. Perhaps,

if these same students were given the posttest at the end of their college career, the results would have been more significant.

Conclusion

In conclusion, the first year of college is a transitional time for young adults and an opportunity for universities to not only make an educational impact, but an impact on the students mental and physical well-being. The current study found that a five-week resilience educational intervention can make an impression on the freshmen students' knowledge of resilience, health promoting lifestyle behaviors, perceived stress, and anxiety. This project is a building block that may be viewed as a strategy for universities to promote resilience as a way of decreasing the burden of mental health issues in college students and preparing them for future adversities in life.

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Appendix A**Institutional Review Board Approval**

Institutional Review Board

Office of Academic Affairs

irb@gcsu.edu

<http://www.gcsu.edu/irb>

DATE: 2020-05-13

TO: Mary Childre

FROM: Sallie Coke, Ph.D., APRN, BC - Chair of Georgia College Institutional Review Board

RE: Your IRB protocol 14092 is Approved for 2020-05-13 - 2021-05-13

Dear Mary Childre,

The proposal you submitted, "Resilience101," has been granted approval by the Georgia College Institutional Review Board. You may proceed but are responsible for complying with all stipulations described under the Code of Federal Relationship 45 CFR 46 (Protection of Human Subjects). This document can be obtained from the following address:

<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html>

The approval period is for one year, starting from the date of approval. After that time, an extension may be requested. It is your responsibility to notify this committee of any changes to the study or any problems that occur. You are to provide the committee with a summary statement. Please use the IRB Portal (<https://irb-portal.gcsu.edu/>) to request an extension, report changes, or report the completion of your study.

Finally, on behalf of IRB, we wish you the best of luck with your study. Please contact GC IRB at any time for assistance.

Sincerely,

Sallie Coke, Ph.D., APRN, BC

Appendix B

Informed Consent

I, _____, agree to participate in the research project entitled *Resilience 101*, which is being conducted by Mary Angela Childre, who can be reached at mary.childre@gscu.edu or 478-454-8255. I understand that my participation is voluntary; I can withdraw my consent at any time. If I withdraw my consent, my data will not be used as part of the study and will be destroyed.

The following points have been explained to me:

1. The purpose of this study is to evaluate a 5-week resilience education intervention program.
2. The procedures are as follows: you will be asked to complete a pre evaluation survey before the 5-week *Resilience 101* class. Following completion of the course, you will repeat the survey.
3. Your name will not be connected to your data. Therefore, the information gathered will be confidential.
4. You will be asked to sign two identical consent forms. You must return one form to the investigator before the study begins, and you may keep the other consent form for your records.
5. You may find that some questions are invasive or personal. If you become uncomfortable answering any questions, you may cease participation at that time.
6. This research project is being conducted because of its potential benefits, either to individuals or to humans in general. The expected benefits of this study include promoting resilience to improve mental health and a healthy transition into university life.
7. You are not likely to experience physical, psychological, social, or legal risks beyond those ordinarily encountered in daily life or during the performance of routine examinations or tests by participating in this study.
8. Your individual responses will be confidential and will not be released in any individually identifiable form without your prior consent unless required by law.
9. The investigator will answer any further questions about the research should you have them now or in the future (see above contact information).
10. In addition to the above, further information, including a full explanation of the purpose of this research, will be provided at the completion of the research project on request.
11. By signing and returning this form, you are acknowledging that you are 18 years of age or older.

Signature of Investigator

Date

Signature of Participant

Date

.....
Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to the GC IRB Chair, email: irb@gcsu.edu.

Appendix C

Minor Written Assent

Project Title: Resilience 101

Investigator and contact information: Mary Angie Childre
mary.childre@gcsu.edu
478-454-8255

1. What is this study about? What will I do in this study?

We are doing a research study about being resilient. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to complete a pre and post survey and a 5-week resilience intervention program that will be once a week.

2. Could anything bad happen to me?

There are no foreseen risks in the study. However, should any of the questions cause any undue stress or anxiety, the researcher will be available, either in person or by her personal contact information to resolve any issues or answer any questions.

Counseling services will be available for further evaluation if you feel you need further guidance beyond what the investigator can provide.

This study is on a voluntary basis, so you can also stop any part of the study after we start.

3. Can anything good happen to me?

We think this study has some benefits. A benefit means that something good happens to you. We think these benefits might be to prevent potential mental health problems and support well-being as you transition into college.

4. Will anyone know I am in the study?

No; this study is completely confidential or kept in secret. You will be assigned a coded number at the beginning of the study that will be a way for the researcher to identify you. No one else will have access to this number.

5. What if I don't want to be in the study?

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study too and will also be signing a consent.

If you decide you DO want to be in this study, please write and sign your name in the blank below.

I, _____, want to be in this research study.
(Write your name here)

(Sign your name here)

(Date)

.....
Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to the GC IRB Chair, email: irb@gcsu.edu.

Appendix D**Demographics**

Please circle or fill in the answer to the following questions:

1. Age _____
2. What gender to you identify as?
Male
Female
Transgender
Other _____
3. Please specific your racial or ethnic identification.
African American
Caucasian
Latino or Hispanic
Asian/Pacific Islander
Two or more
Other/unknown _____
4. What type of degree are you seeking?
Public Health
Psychology
Business
Economics
Computer Science
Education
Health-related field
Music
Foreign language
Liberal studies
History
Mathematics
Undecided
Other _____
5. What is your father's education level?
Some high school
High school
Some college
Associate degree
Bachelor's degree
Master's degree or higher
Trade school
Not sure

N/A

6. What is your mother's education level?

Some high school
High school
Some college
Associate degree
Bachelor's degree
Master's degree or higher
Trade school
Not sure
N/A

7. What is your parental marital status?

Married
Divorced
N/A

8. What are your sources for financing college?

Personal loan
Scholarship
Government grant/free tuition
Self-financing
Parents/relative
Other

9. Including yourself, how many members are in your core family?

10. How many days per week do you get outside to exercise? _____

11. How many days per week do you eat at a fast food restaurant? _____

12. How many days per week do you get 7 hours of sleep or more per night?

Appendix E**Knowledge Quiz**

1. What is resilience?
 - A. Bouncing back from an adverse event
 - B. A negative approach to tough situations
 - C. Depression that occurs after a challenging situation
 - D. Approaching problems in a positive manner

2. Which of the following can help someone become more resilient?
 - A. Avoiding tasks that are challenging or time-consuming
 - B. Thinking that a tough situation is impossible
 - C. Planning ahead to solve problems
 - D. Relying only on yourself to get through a tough situation

3. Which of the following actions would a resilient person take if they made a mistake?
 - A. Forget about the mistake and move on
 - B. Not waste time trying to figure out what went wrong
 - C. Give up on the task
 - D. Figure out why the mistake happened and how to learn from it

4. All of the following are examples of strategies for dealing with conflict and compromise, EXCEPT:
 - A. Telling someone they are right, at the cost of your perspective
 - B. Not being afraid of conflict, and facing a hard situation with courage
 - C. Speaking up for yourself, even if you know someone will disagree with you
 - D. Listening to others with genuine concern and understanding

5. Mindfulness teaches you to be aware of your feelings and
 - A. Then move on
 - B. Accept them
 - C. Change them
 - D. None of the above

6. Mindfulness helps with stress by
 - A. Making your body resistant to stress hormones
 - B. Changing how you react to stress
 - C. Distracting you until the stress passes
 - D. All of the above

7. Which of these is an example of social support?
 - A. Jenny turns to her friends to help her through a break-up
 - B. Jeff goes running when he is stressed out
 - C. Jill eats ice cream after she loses her job
 - D. John uses medication to help him through depression caused by social stressors

8. While at college, where would you NOT go for social support?
 - A. Friends and family
 - B. Your dormitory
 - C. Clubs and student organizations
 - D. Social media

9. An example of good _____ health is getting 8 hours of sleep each night.
 - A. Physical
 - B. Lifestyle
 - C. Emotional
 - D. Mental

10. Opening your mind to new ways of doing things can improve your
 - A. Physical health
 - B. Social Health
 - C. Emotional Health
 - D. Mental Health

11. The life skill that helps you deal with problems and emotions in an effective way is
 - A. Communicating effectively
 - B. Setting goals
 - C. Coping/Resilience
 - D. Assessing your health

12. Which of these is cardiovascular exercise?
 - A. Heavy weight-lifting
 - B. Brisk walking
 - C. Full-body stretching
 - D. Sit-ups/crunches

13. What is the most important meal of the day?
 - A. Breakfast
 - B. Lunch
 - C. Dinner
 - D. Midnight snack

14. Which of the following can result from NOT getting enough sleep?
- A. Diarrhea
 - B. Low-grade fever
 - C. Blurred vision
 - D. All of the above
15. Which of the following is a benefit to physical activity?
- A. Reducing stress
 - B. Improving sleep
 - C. Sharpening your focus
 - D. All of the above

Appendix F

Conner-Davidson Resilience Scale 25 (CD-RISC-25)

For each item, please mark an "x" in the box below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

	not true at all (0)	rarely true (1)	sometimes true (2)	often true (3)	true nearly all the time (4)
1. I am able to adapt when changes occur.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I have at least one close and secure relationship that helps me when I am stressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. When there are no clear solutions to my problems, sometimes fate or God can help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I can deal with whatever comes my way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Past successes give me confidence in dealing with new challenges and difficulties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I try to see the humorous side of things when I am faced with problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Having to cope with stress can make me stronger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I tend to bounce back after illness, injury, or other hardships.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Good or bad, I believe that most things happen for a reason.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I give my best effort no matter what the outcome may be.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I believe I can achieve my goals, even if there are obstacles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Even when things look hopeless, I don't give up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. During times of stress/crisis, I know where to turn for help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Under pressure, I stay focused and think clearly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I prefer to take the lead in solving problems rather than letting others make all the decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am not easily discouraged by failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I think of myself as a strong person when dealing with life's challenges and difficulties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I can make unpopular or difficult decisions that affect other people, if it is necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I have a strong sense of purpose in life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I feel in control of my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I like challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I work to attain my goals no matter what roadblocks I encounter along the way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I take pride in my achievements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add up your score for each column 0 + _____ + _____ + _____ + _____

Add each of the column totals to obtain CD-RISC score = _____

Appendix G

Permission of use of CD-RISC

Dear Mary:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). We are pleased to grant permission for use of the CD-RISC in the project you have described under the following terms of agreement:

1. You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted, or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.
2. You may use the CD-RISC in written form, by telephone, or in secure electronic format whereby the scale is protected from unauthorized distribution or the possibility of modification. **In all presentations of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should not appear in any form where it is accessible to the public and should be removed from electronic and other sites once the project has been completed.**
3. Further information on the CD-RISC can be found at the www.cd-risc.com website. The scale's content may not be modified, although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.
4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.
5. A **student-rate** fee of \$ 30 US is payable to Jonathan Davidson at 2434 Racquet Club Drive, Seabrook Island, SC 29455, USA either by PayPal (www.paypal.com, account mail@cd-risc.com), cheque, bank wire transfer (in US \$\$) or international money order.
6. Complete and return this form via email to mail@cd-risc.com.
7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items from the CD-RISC without first securing permission from the authors.

If you agree to the terms of this agreement, please email a signed copy to the above email address. Upon receipt of the signed agreement and of payment, we will email a copy of the scale.

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at mail@cd-risc.com. We wish you well in pursuing your goals.

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Appendix H

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (*Circle*): **M** **F** Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- | | |
|--|-------------------|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly? | 0 1 2 3 4 |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? | 0 1 2 3 4 |
| 3. In the last month, how often have you felt nervous and "stressed"? | 0 1 2 3 4 |
| 4. In the last month, how often have you felt confident about your ability to handle your personal problems? | 0 1 2 3 4 |
| 5. In the last month, how often have you felt that things were going your way? | 0 1 2 3 4 |
| 6. In the last month, how often have you found that you could not cope with all the things that you had to do? | 0 1 2 3 4 |
| 7. In the last month, how often have you been able to control irritations in your life? | 0 1 2 3 4 |
| 8. In the last month, how often have you felt that you were on top of things? | 0 1 2 3 4 |
| 9. In the last month, how often have you been angered because of things that were outside of your control? | 0 1 2 3 4 |
| 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | 0 1 2 3 4 |

Appendix I

Generalized Anxiety Disorder 7-item (GAD-7) scale

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all sure	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3
Add the score for each column				

Total Score (add your column scores) =

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all _____

Somewhat difficult _____

Very difficult _____

Extremely difficult _____

Appendix J

Health Promoting Lifestyle Profile II (HPLP-II)

LIFESTYLE PROFILE II

DIRECTIONS: This questionnaire contains statements about your *present* way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling:

N for never, **S** for sometimes, **O** for often, or **R** for routinely

	NEVER	SOMETIMES	OFTEN	ROUTINELY
1. Discuss my problems and concerns with people close to me.	N	S	O	R
2. Choose a diet low in fat, saturated fat, and cholesterol.	N	S	O	R
3. Report any unusual signs or symptoms to a physician or other health professional.	N	S	O	R
4. Follow a planned exercise program.	N	S	O	R
5. Get enough sleep.	N	S	O	R
6. Feel I am growing and changing in positive ways.	N	S	O	R
7. Praise other people easily for their achievements.	N	S	O	R
8. Limit use of sugars and food containing sugar (sweets).	N	S	O	R
9. Read or watch TV programs about improving health.	N	S	O	R
10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	N	S	O	R
11. Take some time for relaxation each day.	N	S	O	R
12. Believe that my life has purpose.	N	S	O	R
13. Maintain meaningful and fulfilling relationships with others.	N	S	O	R
14. Eat 6-11 servings of bread, cereal, rice and pasta each day.	N	S	O	R
15. Question health professionals in order to understand their instructions.	N	S	O	R
16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).	N	S	O	R
17. Accept those things in my life which I can not change.	N	S	O	R
18. Look forward to the future.	N	S	O	R
19. Spend time with close friends.	N	S	O	R
20. Eat 2-4 servings of fruit each day.	N	S	O	R
21. Get a second opinion when I question my health care provider's advice.	N	S	O	R
22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	N	S	O	R
23. Concentrate on pleasant thoughts at bedtime.	N	S	O	R
24. Feel content and at peace with myself.	N	S	O	R
25. Find it easy to show concern, love and warmth to others.	N	S	O	R

	NEVER	SOMETIMES	OFTEN	ROUTINELY
26. Eat 3-5 servings of vegetables each day.	N	S	O	R
27. Discuss my health concerns with health professionals.	N	S	O	R
28. Do stretching exercises at least 3 times per week.	N	S	O	R
29. Use specific methods to control my stress.	N	S	O	R
30. Work toward long-term goals in my life.	N	S	O	R
31. Touch and am touched by people I care about.	N	S	O	R
32. Eat 2-3 servings of milk, yogurt or cheese each day.	N	S	O	R
33. Inspect my body at least monthly for physical changes/danger signs.	N	S	O	R
34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	N	S	O	R
35. Balance time between work and play.	N	S	O	R
36. Find each day interesting and challenging.	N	S	O	R
37. Find ways to meet my needs for intimacy.	N	S	O	R
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.	N	S	O	R
39. Ask for information from health professionals about how to take good care of myself.	N	S	O	R
40. Check my pulse rate when exercising.	N	S	O	R
41. Practice relaxation or meditation for 15-20 minutes daily.	N	S	O	R
42. Am aware of what is important to me in life.	N	S	O	R
43. Get support from a network of caring people.	N	S	O	R
44. Read labels to identify nutrients, fats, and sodium content in packaged food.	N	S	O	R
45. Attend educational programs on personal health care.	N	S	O	R
46. Reach my target heart rate when exercising.	N	S	O	R
47. Pace myself to prevent tiredness.	N	S	O	R
48. Feel connected with some force greater than myself.	N	S	O	R
49. Settle conflicts with others through discussion and compromise.	N	S	O	R
50. Eat breakfast.	N	S	O	R
51. Seek guidance or counseling when necessary.	N	S	O	R
52. Expose myself to new experiences and challenges.	N	S	O	R

