

STRESS AND THE BELIEFS OF MEDITATION AMONG COMMUNITY  
COLLEGE STUDENTS

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### **Abstract**

The purpose of this study was to assess stress levels in community college students and their beliefs of meditation. Community college students tend to report high levels of stress due to demographic factors, such low economic status, need to work at least part time, and need for remedial classes. Many of these demographic factors are particularly found in students above the age of 24, which are considered nontraditional students. Understanding stress levels and beliefs of meditation among students is necessary to determine if a meditation program such as Transcendental Meditation (TM) may work within a community college setting to reduce stress. The convenience sample consisted of 221 community college students enrolled in English composition courses at one large community college located on the east coast of the United States. The instrument used for data collection was a questionnaire, which included closed- and open-ended questions. Students completed the Perceived Stress Scale (PSS-14) and the Meditation Beliefs Questionnaire, which has two subscales, knowledge and perceptions of meditation. The study utilized descriptive statistics, analysis of variance procedures, and independent samples *t*-tests to determine differences between stress levels and beliefs of meditation, as well as differences in gender and age segment (i.e., traditional vs. nontraditional). While this study found no statistically significant differences among students' beliefs of meditation and stress levels by gender or by age segment, findings showed statistically significant results for students who reported high versus moderate stress levels regarding beliefs of meditation. Specifically, the high stress group had significantly more knowledge than the moderate stress group about the actual benefits of meditation. One practical implication of the research could be to develop an educational program introducing students to TM, which may reduce stress and improve academic performance. Ultimately, such a program may transform

the lives of community college students by improving graduation rates and by encouraging lifelong practices that have an impact on students' health and wellbeing.

*Keywords:* community college, students, perceived stress, meditation

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## Chapter I: Introduction

### Statement of the Problem

Nearly half of all undergraduate students attend community colleges across the country (Kena, Hussar, McFarland, de Brey, & Musu-Gillete, 2016). These undergraduates are often disproportionately composed of students from the lowest socioeconomic status regardless of race (Provasnik & Planty, 2008). In addition, more than half of community college students are single-parent college students, first-generation students, and students with disabilities (Phillippe, 2015). A considerable percentage of students are underrepresented minorities (i.e., Hispanic, Black) and immigrant English language learners (Jenkins & Weiss, 2011). Also, community college students are often not as academically prepared for college as university students. As these students transition into college, approximately two thirds populate remedial classes with skills weak enough to jeopardize academic success and completion (Bailey, 2009). In addition, these students' characteristics have been linked to increased stress, which can block progress and interfere with academic success (Chickering & Reisser, 1993; Claudat, White, & Warren, 2016).

Among these stressors are academic failure and financial stressors. Low income community college students do not share the same level of success as their higher-income peers (Green, 2006). Although community college students are more likely than students who attend 4-year colleges to be of lower socio-economic status, they still have goals of obtaining a certificate or degree. According to Kena et al. (2015), 34% of students with high socioeconomic status enrolled in a 2-year college earned a degree compared to 15% of students with the low socioeconomic status. It may be for this reason that academic failure is among the top seven student stressors (Ryan, 2009).

Students with the low socioeconomic status are more likely to experience financial stressors

as well. Regardless of socioeconomic status, community college students often work a significant number of hours at a full-time and/or part-time job (Joshi, Beck, & Nsiah, 2009), which may result in overextended workloads and increased stress levels. These challenges, combined with having to take remedial classes before they can earn credit toward a degree, as well as new instructors and new subjects each semester, often lead to higher levels of stress, which negatively impacts certificate or degree attainment and “the optimal learning well-being of everyone” (hooks, 2010). Not only is it widely known that stress may interfere with academic achievement, but unmanaged stress could lead to more serious physical and psychological consequences, such as anxiety and depression (Rosenthal, 2011). Therefore, reducing stress and promoting academic achievement in students not only benefits the individual, but it also benefits their families and communities as well. However, few community college trustees, administrators, and faculty (i.e., stakeholders) discuss student health or the impacts of stress on student health as a concern (Floyd, 2003). This may be one reason why so few research studies have focused on community college students’ stress levels. Some of the previous research includes students’ negative thoughts associated with being undecided about a major (Starling & Miller, 2011), stressors faced by lesbian, gay, bisexual, transgender, and queer (LGBTQ) students (Sanlo & Espinoza, 2012), and minor hassles faced by students, such as long lines and transportation (i.e., getting to and from school) (Ryan, 2009).

### **Study Focus**

Various methods for reducing stress, such as relaxation techniques and meditation practices, have been used for thousands of years by various populations throughout the world (Sedlmeier et al., 2012). Centers for mindfulness, such as the UCLA Mindful Awareness Research Center in California and the Center for Mindfulness in Medicine, Health Care and Society at the University of Massachusetts conduct research and teach interested individuals how to practice

meditation. One such meditation practice is that of transcendental meditation (TM). TM is a secular practice that is one of the oldest forms of meditation. An individual practices TM by sitting silently twice a day reciting a mantra, which is referred to as a sound without meaning (Travis & Arenander, 2006). Evidence shows that TM not only relieves depression, but it is also effective at reducing stress (Dillbeck, 1977; Rosenthal, 2011). Moreover, perhaps because there is a correlation between stress and lower academic performance, TM has been documented to improve academic performance (Kember, 1985; So & Orme-Johnson, 2001). Given the goal of schools in general, and the pressures of community colleges in particular, to foster cognitive capacities and promote academic success for all students, it would be beneficial for community college leaders, faculty, staff, and students to gain a greater understanding of the perceived stress levels of students and the benefits associated with the practice of meditation in academic settings. Therefore, the purpose of this descriptive survey study was to assess levels of stress in community college students and their beliefs toward the use of meditation.

Research regarding community college students' beliefs about the use of meditation in higher education is needed to determine the potential for integrating the practice of meditation in the community college setting. Some evidence exists about the benefits of TM for reducing stress, improving academic performance, and increasing graduation rates in a variety of school settings, such as middle school, high school, and higher education (Barnes, Bauza, & Treiber, 2003; Colbert et al., 2011; Colbert, 2013; Nidich et al., 2011; So & Orme-Johnson, 2001). However, before implementing a meditation program for college students, more needs to be understood about community college students' perceived levels of stress and their beliefs regarding the use of meditation.

In one study, the first of its kind regarding perceived stress and coping strategies of students

at two community colleges in Illinois, findings showed that “students who were least confident in achieving their academic goals felt more stress and more than one-third of the students wanted information about ways to reduce stress” (Pierceall & Keim, 2007, p. 711). In another recent study, also the first of its kind regarding knowledge of and attitudes towards meditation in college students, the Health Belief Model (HBM) was used as a framework for categorizing responses to a questionnaire to identify barriers and opportunities involved in promoting meditation in 4-year college students (Gryffin, Chen, & Erenguc, 2014). Results of this study showed that nearly half of the 72 students enrolled in a general education class on personal and family health identified time as a major barrier to meditation practice (Gryffin et al., 2014). Gryffin et al.’s (2014) study provided a framework for the current dissertation research to explore perceptions that may affect a student’s decision to use meditation to reduce stress and improve academic success.

Based on the nascent literature on perceived stress and beliefs of community college students regarding the use of meditation, this research was designed to add to the literature in several ways. First, understanding the perceived stress levels of students is needed to advance the discussion among community college stakeholders regarding students’ health needs. Second, the study was designed to understand the factors that may motivate community college students to participate in a health practice, such as meditation. This is needed if stakeholders are to develop holistic educational programs that may improve academic success and completion. Third, in addition to using the widely used Perceived Stress Scale (PSS), the researcher decided to use the questions and the findings from Gryffin et al. (2014) as a baseline for creating an instrument in which to survey students about their beliefs of meditation. Fourth, exploring these issues through the lens of the HBM, which was similarly done by Gryffin et al., to explain an individual’s acceptance of health-based programs, the researcher was able to examine factors that may affect

community college students' decisions to participate in meditation practices.

### **Significance of the Study**

Low graduation rates have a negative impact on the health and wellbeing of students, their families, and their communities. These low rates tend to reinforce the cycle of poverty, and they limit potential life-time earnings, which in turn reduce local and federal revenue that promotes a thriving economy. Approximately 400 or 38% of community colleges in the United States had graduation rates of less than 13% (Schneider & Yin, 2012). The low graduation rate is necessarily intertwined with the student population of community colleges. A majority of community college students are considered to be at-risk, a status which includes being a member of an underrepresented minority and of low socio-economic status. With ages ranging between 22 and 30 years of age, they are usually employed and enrolled as part-time students, and are more likely to be academically underprepared when they enter college compared to those attending 4-year educational institutions (Kena et al., 2015).

Students who fail to earn a degree tend to remain in poverty. Poverty rates for Blacks, Hispanics, and American Indians were generally higher than the average national poverty rates in 2013 (Kena et al., 2015). Educational attainment continues to be the best path out of poverty (Beegle, 2003). For instance, the pattern of higher earnings increase for both males and females across racial and ethnic groups with higher levels of degree attainment (Kena et al., 2015). Students who graduate with an associate's degree annually earn approximately \$7,500 more than students who complete high school (Kena et al., 2015). As such, it is estimated that approximately 3,800 community college students in the 2008 – 2009 cohort who failed to earn an associate's degree lost \$24,000,000 in annual salary gains (Schneider & Yin, 2012). In addition, the loss in Maryland revenue through income taxes was estimated at \$1,100,000 dollars and the loss in federal

taxes was estimated at \$3,600,000 (Schneider & Yin, 2012). Therefore, students who fail to earn an associate's degree incur immediate and long-term consequences that negatively affect their lifetime earnings, but this loss in potential earnings also has an impact on the total tax revenue collected by local and federal governments.

According to Schneider and Yin (2012), strategies need to be employed to increase the numbers of community college students earning their degrees. Therefore, researching the beliefs of community college students regarding the use of meditation to reduce stress is important, as stress has been shown to affect academic success (Chickering & Reisser, 1993; Claudat et al., 2016). Thus, reducing stress may improve cognition, academic performance, and graduation rates.

Stress not only significantly impacts student learning and achievement, it also negatively affects students' health and wellbeing. For example, stress contributes to high blood pressure and increases the stress hormone known as cortisol in the body (Rosenthal, 2011). In addition, underserved students living in poverty face additional stressors and barriers to education, such as jobs, basic needs, (i.e., housing, food, health care, money) and feeling lack of control over their life (Beegle, 2003). Researchers have noted that these structural inequalities have long been ignored at all stages of education, even when decades of research has demonstrated that low-income students value education as much as their higher-income peers (Beegle, 2003; Gorski, 2013; Kozol, 2005; Weis & Fine, 2012). If leaders and policy makers ignore structural inequalities, the likelihood that community college students will fail to earn a certificate or degree remains high.

While leaders and policy makers may ignore structural inequalities and their negative effects on the health, welfare, and education of students (Gorski, 2013; Weis & Fine, 2012), students continue to enroll in community colleges with aspirations of earning a degree or certificate. As such, research regarding students' stress and the practice of meditation in the

community college setting contributes to the scholarly literature and may lead to the development of programs that could inform policy. Such programs may include the teaching of meditation within community college institutions that may reduce stress and improve academic performance and graduation rates.

The research findings, once analyzed, will provide an essential framework for understanding important characteristics and present conditions among community college students to determine if a new meditation program may work within a community college setting to reduce stress and improve academic success. The desired impact of the research is to develop an educational program that may reduce stress and thereby improve academic performance and graduation rates. Ultimately, such a program might be able to transform the lives of community college students by encouraging lifelong practices that have an impact on their health and wellbeing.

### **Positionality Statement**

Researchers must make their views explicit in order to limit the negative influence of their biases and assumptions on their research. Maxwell (2005) noted that “any view is a view from some perspective, and therefore is shaped by the location (social and theoretical) and the ‘lens’ of the observer” (p. 39). As a community college professor who practices TM twice daily and believes that community college students are frequently misunderstood and viewed through a deficit lens (Ladson-Billings & Tate, 1995), I know that my views in this area are not neutral. Each semester, I witness students’ stress in the classroom firsthand. The students’ stress is often due to workloads, family and work commitments, and fear of academic failure. I believe that educators and leaders alike need to implement practices that address students’ cognitive and affective issues when structural inequalities continue to have a negative impact on students’ stress



and their academic achievement and overall chances of success in life. Implementing practices that reduce stress and promote academic achievement among underserved student groups may lessen the adverse effects of socioenvironmental factors and increase the number of students earning a community college degree or certificate.

As an individual who experiences the ongoing benefits of TM through my own practice, I must strive to remain objective and ever mindful of my own assumptions and subjective bias (Bourke, 2014). Bourke (2014) stated, “We have to acknowledge who we are as individuals, and as members of groups, and as resting in and moving within social positions” (p. 3). These groups may take many forms; they may be based on biological attributes, such as gender and race, and/or environmental attributes, such as socioeconomic conditions, life experiences we have encountered, work experiences, and/or educational experiences. I realize that I have access to power and privilege both within the educational setting and within the community. This privilege allows me to connect with community college leaders and faculty, scholars, medical professionals, and policy makers. Researching students’ stress and beliefs regarding the use of meditation in the community college setting without acknowledging this privilege could perpetuate an unequal system. To ensure validity of the research, I will approach the research with a view that illuminates power differences and that celebrates group distinctions, such as ethnicity, socioeconomic status, or educational status (e.g., student, professor) within the community college setting (Carlton Parsons, 2008). Recognizing this privileged positionality, I commit “to being open-minded, skeptical, and considerate of research data” to mitigate bias and to arrive “at a conclusion after methodological scholarly work” (Machi & McEvoy, 2012).

### **Research Questions and Hypotheses**

The purpose of this descriptive study is to assess levels of stress in male and female English

composition community college students and their beliefs about meditation. Assessing beliefs toward the use of meditation may be a first step in designing programs that can be used to teach TM in order to reduce stress in students. The study will determine a baseline of stress in community college students. The proposed study includes one overarching research question, two sub-set questions, and three null hypotheses.

**Research questions.** The following research question and subquestions will serve as a guide to this study. The overarching research question is Do beliefs about meditation vary according to stress levels (i.e., high, moderate, low) among community college students?

**Overarching research question.** Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low)?

***Subquestions.***

1. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and gender (i.e., male and female)?
2. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and age segment (18-23 [traditional] and 24+ [nontraditional] students)?

**Null hypotheses.** Hypotheses were used to answer the research questions of the study. The three null hypotheses of the study follow.

**H<sub>0</sub>1:** Community college students' beliefs about meditation do not vary according to their level of stress (i.e., high, moderate, low).

**H<sub>0</sub>2:** Community college students' beliefs about meditation do not vary according to their level of stress (i.e., high, moderate, low) and gender (i.e., male and female).

**H<sub>0</sub>3:** Community college students' beliefs about meditation do not vary according to their

level of stress (i.e., high, moderate, low) and age segment (18-23 and 24+/traditional and nontraditional students).

### **Theoretical Framework**

The HBM was developed in the 1950s by social psychologists Irwin Rosenstock, Godfrey Hochbaum, Stephen Kegeles, and Howard Leventhal for the U.S. Public Health Services (Khosrowjerdi, 2016). The HBM is the most widely used framework for understanding health behavior and for motivating people to avoid a negative health consequence (e.g., stress, depression). According to Champion and Skinner (2008), the model was originally developed to explain why people who participated in programs to prevent illness either dropped out or failed, and later it was adapted to study behavioral responses to health-related conditions. Since that time, the model has been widely used with a variety of populations to study and explain why people do not participate in health-related programs. The HBM is also used as a framework for developing health interventions (Champion & Sugg Skinner, 2008; ReCAPP, 2016). The HBM consists of six constructs: (a) *perceived susceptibility*, one's belief about getting an illness or condition (e.g., stress or depression); (b) *perceived severity*, one's belief about the seriousness of the condition; (c) *perceived benefits*, one's belief about the positive attributes of a health action; (d) *perceived barriers*, the possible negative attributes of a health action; (e) *cues to action*, factors that trigger action, and; (f) *self-efficacy*, belief that one can achieve the behavior in order to achieve the outcome (Champion & Sugg Skinner, 2008). For the purposes of this study, the first four constructs of the HBM were utilized to frame this study to add to the scholarly literature and validate findings published by Gryffin et al. (2014).

The HBM theorizes that engaging in a health-related behavior (e.g., meditation) is based upon a person's perceived threat (perceived susceptibility and perceived severity) of experiencing a

condition, such as stress (Conner, 2010). The HBM posits that beliefs about a health-related action (perceived barriers), which would need to be overcome, and the beliefs about the results of that action (perceived benefits) are helpful in reducing the risk of the threat (e.g., stress) and determine whether a person will engage in a health behavior (Champion & Sugg Skinner, 2008). While the HBM has been used in studies regarding health behaviors, such as breast self-examinations, dental care, and condom use (Carpenter, 2010), the researcher found no studies to date that explored perceived stress and meditation among community college students. As a model for explaining and predicting health behaviors, the HBM was used in the current study to explore factors that may affect a student's decision to use meditation to reduce stress and improve academic success.

## **Chapter II: Literature Review**

Community college students often face increasing levels of stress, which may have a negative impact on their academic performance and ability to graduate. While meditation programs have been used for decades in clinical settings and are recognized for their effectiveness in reducing stress (Burns, Lee, & Brown, 2011; Dillbeck, 1977) and symptoms of depression (Brooks & Scarano, 1985; Rosenthal, 2011), meditation is emerging as a practice that improves academic performance (Kember, 1985; So & Orme-Johnson, 2001) and graduation rates (Colbert, 2013) when used in an academic setting. While studies suggest that meditation practice offers many potential benefits to students, it is necessary to first determine the levels of stress in community college students and the beliefs, knowledge, and attitudes towards meditation in the students to determine whether and the reasons why they would participate in meditation practices. This chapter will review the literature that supports this study. The review of the literature is divided into three sections: studies relevant to college students' stress, definitions and descriptions of mindfulness and TM programs, and studies on the use of meditation in academic settings.

### **Stress in College Students**

Numerous studies have focused on university college students' stress. These studies include examining the impact of stress on academic major, self-esteem, and health symptoms in students attending various 4-year institutions (Abouserie, 1994; Hudd et al., 2000; May & Casazza, 2012). Studies on stress in university students also include identifying stressors for African American college students, finding relationships between stress, fatigue, and cognitive functioning, as well as students' expectations and stress levels (KREIG, 2013; LINDSEY et al., 2011; PALMER et al., 2014). One recently published study explored factors that may affect university students' decisions to pursue mindfulness meditation practices to reduce stress and health risks

(Rizer, Fagan, Kilmon, & Rath, 2016). Another study identified barriers and opportunities involved in promoting the use of meditation in university students to reduce stress (Gryffin et al., 2014). Because the focus of this study is on perceived stress and beliefs about meditation among community college students, the researcher used the below search strategies.

First, the researcher conducted a comprehensive search of *the Community College Journal of Research and Practice*, *the Journal of Applied Research in Community Colleges*, *the College Student Journal*, *the Community College Journal*, *the Community College Review* and *Higher Education* using the same search terms. The rationale for the above search was done in the interest of finding articles that centered on the themes of this study: stress among community college students (Floyd, 2003; Miller, Pope, & Steinmann, 2004). As such, the search terms included “stress in college students,” “community college students’ stress,” and “students’ academic stress.” However, when little to no results were returned, the researcher used the search term “stress.” This returned a total of 864 articles, of which only 61 articles included research regarding some aspect of university or community college students’ stress. Out of the 61 articles identified by this search regarding college student stress, only 22 focused on community college students.

While little research has been conducted on community college students’ stress levels to date, findings reveal that students with clearly articulated goals have less stress and higher persistence (Mason, 1998). Data collected through focus groups and observation has shown that community college students’ stress is related to school, relationships, and financial problems (M. Johnson, 2009). In another study conducted by Pierceall and Keim (2007), 212 community college psychology students in southern Illinois completed a survey regarding their perceived stress and coping strategies. The PSS was used due to its simplicity, reliability, and validity. The PSS was developed to be a predictor of health outcomes and a global measure of the level of perceived

stress (Cohen, Kamarck, & Mermelstein, 1983). The researchers collected data on demographics, such as age, sex, numbers of hours enrolled, type of academic program and used items assessing for ways of coping with stress and interest in stress reduction information and programs. Results showed 13% of the students fell into the low stress category, 75% into the moderate stress category, and 12% into the high stress category. Students reported their top three ways to handle stress were talking with family and friends, and engaging in leisure activities and exercise. Students also reported less health-promoting coping strategies, such as drinking alcohol and smoking.

Watson (2016) examined the relationship among perceived stress, athletic identity (i.e., athletic participation), and locus of control in 144 community college student athletes. Results showed that athlete identity represents a contribution to the variance of perceived stress (Watson, 2016). Miller et al. (2004) surveyed 272 community college students during class sessions of introductory mathematics courses to identify students' challenges to academic success and their response strategies to the challenges. Balancing personal and academic life and paying for college were reported to be the most challenging. The students' top four response strategies included consulting family members, using college academic advice, using financial aid services, and participating in prayer or meditation. Finally, in a qualitative study, veterans attending community college identified "fitting in" and the loss of a fixed schedule as particularly stressful (Jones, 2017). It appears that regardless of which subset of the community college population students may most closely identify with, institutions may need to provide help to students suffering from stress by offering a program, such as meditation.

Community college students' demographic characteristics often have an impact on their stress levels and their ability to complete their undergraduate programs. For example, student-

parents reported the most challenging stressor was the need to balance work, home, child-care, and academic responsibilities (Peterson, 2016). Immigrant students identified challenges, such as acculturation stress (Fiebig, Braid, Ross, Tom, & Prinzo, 2010; Szelenyi & Chang, 2002). Adult women have high levels of stress due to age, as well as financial and health concerns (L. Johnson, Schwartz, & Bower, 2000). Researchers have investigated LGBTQ students with an aim to understand the impact of stress caused by coming out to family as well as stress related to academic achievement and success in college (Sanlo & Espinoza, 2012). In a different study, Ryan (2009) randomly sampled 161 diverse community college novice students. Many of the novice students surveyed were enrolled in remedial math, reading, and writing courses. Survey results showed that hassles, such as transportation (getting to and from school), long lines, and annoying staff, were the most common sources of stress followed by deadlines and feeling overloaded with too many demands.

Addressing college students' stress through programs, such as meditation, may reduce students' use of harmful coping strategies (e.g., alcohol) and lead to better academic outcomes. Therefore, community colleges should support healthy campuses and healthy students by promoting student engagement in programs that promote good health (Floyd, 2003) and introduce students to constructive ways to handle their stress.

### **Mindfulness Meditation and TM**

**Definitions and descriptions.** Many may argue that the practice of meditation is a process that promotes good health. Meditation practices may be widely known and used in clinical settings for reducing stress; however, it is an emerging field in academic settings. For this reason, the definitions of two different meditation practices are explained here for clarification. The definition used for mindfulness meditation in this review comes from researcher Jon Kabat-Zinn,



who founded the stress reduction program in 1979 and is the author of several books regarding mindfulness meditation. Kabat-Zinn (1982) stated, “Mindfulness means paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1982) or moment-to-moment awareness of one’s experience. Mindfulness is not based in any one religion and does not conflict with one’s beliefs or traditions (Kabat-Zinn, 1982). “It is simply a practical way to be more in touch with the fullness of your being through a systematic process of self-observation, self-inquiry, and mindful action” (Kabat-Zinn, 1982).

A variety of meditation practices and other methods for reducing stress, such as relaxation techniques, have been used for centuries. Both the center for mindfulness in Medicine, Health Care and Society at the University of Massachusetts and the UCLA Mindful Awareness Research Center in California conduct research and teach individuals how to practice meditation. Kabat-Zinn (1982) created a program referred to as Stress Reduction and Relaxation Program (SR&RP), which included a 10-week course (two hours per week) for patients experiencing chronic pain. Kabat-Zinn also designed the Mindfulness-Based Stress Reduction (MBSR) program. Currently, any individual, with or without pain, may enroll in an 8-week MBSR program through the University of Massachusetts Medical School website (Center for Mindfulness, 2017). This program consists of weekly meetings, homework assignments, yoga, practice CDs and workbooks, as well as tailored instruction to work with one’s own stress, pain, and/or illness for a total of 31 hours of group instruction. To date, according to the center for mindfulness website, more than 20,000 people have completed the program.

The definition used for TM comes from Maharishi Mahesh Yogi, who derived the technique from practices in India and brought it to the United States in the 1960s (W. J. Johnson, 2014). According to the Oxford Dictionary of World Religions (Bowker, 2003), TM is a technique

that one practices by sitting comfortably with eyes closed repeating a mantra or sound without meaning twice a day for 20 minutes at each sitting. The practice of TM is different from other relaxation and meditative practices, as it does not require concentration or relaxation during practice (Eppley, Abrams, & Shear, 1989). According to the TM (2017) website, over 6,000,000 people from different cultures and religions have learned the technique to date.

TM is one of the oldest forms of meditation; it is a secular practice that is simple to learn and is described as an effortless technique (Maharishi Vedic Education, 2010). The TM technique differs from MBSR in several ways. First, the time required to learn TM is significantly less than that of MBSR. TM instruction includes approximately 6 hours of instruction with a certified TM teacher who is a longtime meditator (Rosenthal, 2011). Then, as needed, 30-minute sessions are scheduled to give students a chance to ask questions to maximize the benefits of TM (Rosenthal, 2011). The extent to which meditation programs, such as MBSR and TM, improve student outcomes are examined here for common findings, trends, and generalizations in a variety of academic settings. First, the studies examining the effectiveness of mindfulness meditation in academic settings will be reviewed, followed by the pertinent literature on TM.

**Mindfulness meditation in academic settings.** Before reporting the outcomes of studies of mindfulness meditation in academic settings, it is important to note that an attempt was made to include only mindfulness meditation studies utilizing MBSR in schools due to the required protocol and training of students. The rationale for this approach was that the studies could provide a richer, methodologically sound basis for analysis across age, grade, and student outcomes. However, few MBSR studies on students in academic settings exist, and other mindfulness studies often include adaptations to the 8-week MBSR program as designed by Jon Kabat-Zinn (Schoeberlein & Koffler, 2005), which makes it difficult to evaluate findings across

studies. For this reason, peer-reviewed articles that include MBSR studies, as well as adaptations to MBSR often referred to as mindfulness programs, are included and grouped by school level.

Howell and Buro (2011) investigated relationships among mindfulness and achievement-related self-regulation among 290 Canadian college students using online survey methods that included scales and questionnaires (i.e., Mindful Attention Awareness Scale, Achievement Goal Questionnaire, Procrastination Scale). Their findings suggested there is a positive relationship between self-regulation and successful academic performance. They found that mindfulness is one way to foster self-regulation. However, the study had limitations, including the use of self-report measures, which depend on honest responses, where biases may have influenced participants' responses (Howell & Buro, 2011). Other limitations included modest effect sizes and the fact that other indicators of actual academic performance, such as grades, were not collected. While this study did not measure the effects of mindfulness meditation practice, it added to the literature, as self-regulation is associated with improved academic functioning.

A qualitative study was conducted to explore the effects of a mindfulness meditation practices at three different Catholic schools on mental health promotion (Campion & Rocco, 2009). The study was conducted with elementary and middle school students, and more than one third of the students described how meditation helped with emotional regulation, such as controlling feelings of anger. In this study, adaptations of MBSR were used at each of the schools. For example, youth at one school practiced meditation four or five times a week, while students at another school practiced meditation only once a week (Campion & Rocco, 2009). Campion and Rocco (2009) stated that the implementation of the meditation program at each school appeared to be affected by how leadership (i.e., assistant principals and teachers) adopted the mindfulness meditation program, as well as how they trained the teachers prior to implementation (Campion &

Rocco, 2009). It is also likely that mindfulness meditation programs are modified in educational settings due to the curricular requirements and time constraints of school schedules, which have little room for additional programs with significant time commitments, such as MBSR. Regardless of adaptations, in another qualitative study, middle school students in a 5-week reported that Tai Chi activities and mindfulness practices helped them feel calm, relaxed, and improved their sleep (Wall, 2005).

The research on elementary youth and mindfulness-based practices in educational settings is an emerging field, and therefore research is limited. As such, the studies that will be evaluated next occurred within the last 10 years. In 2010, researchers investigated mindfulness awareness practices (MAPs) on executive functioning in children (Flook et al.), mindfulness and yoga practices on urban youth's response to stress (Mendelson et al., 2010), mindfulness-based education (ME) on urban children's wellbeing (Schonert-Reichl & Stewart Lawlor, 2010), and mindfulness and relaxation lessons and practices to improve mental health (Joyce, ETTY-Leal, Zazryn, & Hamilton, 2010). While the above mindfulness-based programs differed in length, design, and strategies, the findings suggest that mindfulness is beneficial for children, reduces stress, and is feasible to implement in school settings (Mendelson et al., 2010). When teachers were asked to rate students who participated in the ME program on measures of social and emotional competence, significant improvements emerged compared to the control group (Schonert-Reichl & Stewart Lawlor, 2010).

One may argue that in today's world, underserved youth are under significant stress at home and at school. In one study, facilitators who were trained in the Center for Mindfulness Program and had been teaching mindfulness training for more than 15 years at the time of the study (Napoli, Rock Krech, & Holley, 2005) instructed the children during mindfulness sessions for 24

weeks. These facilitators were provided by the Attention Academy Program (AAP). The authors reported that selective attention significantly increased and test anxiety significantly decreased as a result of the program (Napoli et al., 2005). This mindfulness model provides students with ways to deal with stress and increase attention skills in the classroom (Napoli et al., 2005). According to Napoli et al. (2005), “incorporating tools for stress reduction and relaxation is essential and needs to be an integral part of the effective education of teachers and children” (p. 104). Another mindfulness meditation study showed promise in reducing problematic responses to stress among minority fourth and fifth grade students (Mendelson et al., 2010). High school students with documented disabilities showed significant improvements in teacher ratings of students’ academic achievement after engaging in a mindfulness meditation program (Beauchemin, Hutchins, & Patterson, 2008). Implementing mindfulness practices in academic settings may be essential to reduce stress and increase the health and wellbeing of students.

Students transitioning from high school to college may experience more feelings of stress which may also negatively impact students’ health and well-being making stress reduction techniques necessary at the college level. For example, students must learn to navigate a new campus, build relationships with professors and peers, and balance their studies along with other obligations. The findings from one meta-analysis suggested that MBSR may improve mental and physical wellbeing (Grossman, Niemann, Schmidt, & Walach, 2004). One could argue that happy, healthy students are more likely to master course content and succeed academically.

Also, in academic settings, decision making and moral reasoning are important for students. Reducing stress in students may aid in the capacity to exercise good judgment in decision making. Research has shown there are positive effects of MBSR on moral reasoning and decision making in university students (Shapiro, Jazaieri, & Goldin, 2012), as well as test anxiety and maintaining

attention in elementary school students (Napoli et al., 2005). In the first study of its kind, university graduate students using the MBSR protocol were assessed on moral reasoning (Shapiro et al., 2012). While, there was no change in moral reasoning post intervention, 2-months later, results showed significant improvements in moral reasoning, mindfulness, emotion, and wellbeing (Shapiro et al., 2012). This may be a result of continued practice; however, more research is needed on mindfulness practice and moral reasoning in order to draw conclusions (Shapiro et al., 2012).

Two additional studies (Deckro et al., 2002; Oman, Shapiro, Thoresen, Plante, & Flinders, 2008) were conducted with college students using very different mindfulness meditation interventions. Both required weekly 90-minute sessions on stress. One study was conducted with undergraduates at Harvard University and the other at a Catholic University in California. Findings of both studies showed significant reductions in perceived stress. In both studies, the participants were majority female, so results may not be applicable to males. In Deckro et al.'s (2002) study, there was a 30% loss in student participation during the study. The authors cited reasons that are typical to student populations, such as lack of time to attend the intervention trainings due to too much work. Prior research suggests that students, especially underserved students who work multiple jobs while attending college, have little time for additional commitments. If the evidence reveals that TM is effective and benefits students in an academic setting, it may prove to fit better with students' hectic lives and schedules.

**Literature on TM in academic settings.** Peer-reviewed studies have investigated the effects of TM on student populations. The peer-reviewed TM studies followed the same protocol for TM instruction. Specifically, students were taught the TM technique by certified TM teachers. Per the nonprofit Maharishi Vedic Education organization, training must be under the study of

certified TM teachers. In the TM studies included in this review, the majority asked the students to practice TM in the school setting during the period under investigation. However, in some instances, students practiced or were encouraged to practice TM in a non-school setting as well. Practicing TM in academic settings may prove to be significantly beneficial for students on a variety of student outcomes, such as academic achievement. Students who practice TM demonstrate reduced absenteeism (Barnes et al., 2003), improved academic achievement (Nidich et al., 2011), and report positive first person experiences of the technique (Rosaen & Benn, 2006). Studies have revealed that meditating students demonstrate statistically significant reductions in anxiety and improved academic achievement compared to controls (nonmeditating students). Of particular note are findings that the lowest performing middle school students who practiced TM significantly improved their academic performance compared to controls (Colbert, 2013).

Underserved student populations are likely to experience the greatest levels of stress due to environmental factors that may disproportionately affect academic success. The first quasi-experimental TM study conducted on racially and ethnically diverse high school students showed improvement in general psychological distress and trait anxiety (Colbert et al., 2011). Another study showed significant increases in 12th grade graduation rates in meditating students compared to their nonmeditating counterparts, with the largest difference observed in the low academically performing students (Colbert, 2013). One study conducted on the Chinese population hypothesized that regular practice of TM would improve cognitive ability (So & Orme-Johnson, 2001). In this study, high school students volunteered to learn the TM technique. TM practice produced significant effects on all measurements, including the Constructive Thinking Inventory (measures abilities and attitudes that predict success in work), Test for Creative-Thinking Drawing Production (measures such traits as comprehension, analysis, and synthesis), Inspection Time (measures speed

of information processing), and Group Embedded Figures Test that predicts academic achievement to name a few (So & Orme-Johnson, 2001). Therefore, it appears that TM promotes cognitive capacity, academic success, and improves graduation rates among ethnically diverse students.

Students who experience high levels of unmanaged stress are more likely to develop anxiety and/or depression and fail to succeed in academic endeavors. Studies on the effects of TM in college students on mindfulness (Aldahadha, 2013; Tanner et al., 2009), stress, anxiety (Dillbeck, 1977), and depression (Burns et al., 2011) show significant positive results. One longitudinal study examined the effect of practicing TM on nonverbal intelligence scores (Fergusson, Bonshek, & Masson, 1995) in Cambodian undergraduate students. This study revealed a significant increase in nonverbal intelligence scores over a 3-month period; however, students also engaged in two additional Vedic practices in addition to the practice of TM (Fergusson et al., 1995). Two longitudinal studies were conducted; one investigated ego development in college alumni over a 10-year span (Chandler, Alexander, & Heaton, 2005), while another measured cognitive ability and cognitive style over a 3- and 5-year period. Both studies found that cognitive ability significantly increased over time through the use of TM (Dillbeck, Assimakis, Raimondi, Orme-Johnson, & Rowe, 1986).

Students of all ages, especially underserved students, struggle with a variety of personal, financial, and/or academic stressors, which are known to impede academic success (Chickering & Reisser, 1993; Claudat et al., 2016). Nationally, there has been a focus on increasing the number of college graduates, and research shows that jobs overwhelmingly go to those individuals who have education beyond high school education (Carnevale, Jayasundera, & Gulish, 2016). If the evidence reveals that the effects of school meditation programs reduce students' stress and improve students' academic performance, it may benefit schools to incorporate meditation practice into community



college settings as it could improve graduation rates.

Quite possibly, the neediest youth are minorities and/or youth with the low socioeconomic status. Promoting the academic achievement of these youth will likely maximize their success, health, wellbeing, and positive contributions to society. The subjects of all three studies described here include at-risk, minority adolescents who were identified as academically low performing and with the low socioeconomic status living in urban areas (San Francisco, Detroit and Augusta). Nidich et al., (2011) evaluated change in academic achievement of minority students (who were below level in English and Math) practicing TM compared to nonmeditating students in San Francisco's Unified School District. The results showed significant improvement compared to controls on English and Math scores. A greater percentage of meditating students improved at least one performance level in English and Math compared to controls (Nidich et al., 2011).

The effects of TM on stress reduction and negative school behavior showed a decrease in absenteeism, infractions (e.g., disruptive behavior, dress violations), and suspension rates (Barnes et al., 2003). Rosaen and Benn (2006) were the first to conduct a systematic qualitative study on the adolescent experience of TM. During interviews, students stated that they experienced an increase in states of restful alertness, improvement in self-control, and improvement in academic performance.

There are several methodological concerns of the above studies on the effects of TM on adolescents. These concerns include a nonrandomized design (Nidich et al., 2011) and small sample sizes (Barnes et al., 2003; Rosaen & Benn, 2006). Not only is the small sample size a concern in Rosaen and Benn's (2006) study, but bias is a concern as well because students may characterize their experience in order to justify their practice of TM. Also, in three studies, the duration of the evaluation was insufficient to capture the long-term sustained benefits of practicing

TM. Nevertheless, the results and proposed theoretical framework from Rosaen and Benn suggest that the practice of TM may help adolescents meet the inevitable challenges that accompany this developmental stage. If quantitative results and the lived experiences of the neediest youth continue to reveal positive outcomes, leaders and educators in school settings should consider implementing a simple, secular meditation practice, such as TM.

Among the developmental challenges of the adolescent stage are trying to fit-in and feeling accepted as students work to succeed academically. Therefore, high school students are often faced with a unique set of stressors. High school students must navigate peer pressure and academic commitments. Underserved students are more likely to succumb to negative peer pressure, which may have devastating consequences. Researchers So and Orme-Johnson (2001) conducted a study to determine whether 362 high school students in Taiwan who regularly practiced TM would improve on seven cognitive and affective variables. These variables were assessed by the Test for Creative Thinking-Drawing Production, Constructive Thinking Inventory, Group Embedded Figures Test, State and Trait Anxiety, Inspection Time, and Culture Fair Intelligence Test. Findings showed that “TM produced significant effects on all seven variables compared to no-treatment controls and strongly support that TM improves performance on several cognitive and affective measures” (So & Orme-Johnson, 2001, p. 419). Some have argued that meditation and napping result in similar benefits, so it is important to note that napping had no effect on students’ cognitive or affective measures, and students practicing contemplation meditation improved in only two of the seven variables (inspection time and embedded figures). However, some of the effects of TM practice on cognition can be expected due to its ability to reduce stress and the strong evidence that stress degrades cognitive performance (Eppley et al., 1989).

In the first study of its kind, Colbert et al. (2011) evaluated the effects of the TM program on racial and ethnic minority students (i.e., Hispanic, African American, American Indian) attending high schools in Connecticut, South Dakota, and Arizona. The authors used the Strengths and Difficulties Questionnaire (SDQ) emotional symptoms scale to measure psychological distress and the Spielberger State Trait Anxiety Inventory for Children to measure student stress levels. This test includes 20 items that measure “How I Feel.” The Mental Health Inventory (MHI) was used to assess overall mental health and depressive symptoms (Colbert et al., 2011). Results showed significant improvement in study outcomes and significant reductions in SDQ emotional symptoms and trait anxiety, while the MHI was not statistically significant.

There are few studies to date that have examined the relationship between TM and academic achievement in high school students. Colbert’s (2013) results showed a significant increase in graduation rates; 87% of meditating students graduated compared to 66% of nonmeditating students. Students who practiced TM showed significant improvements in English and Math (Nidich et al., 2011), as well as on several cognitive measures compared to randomized controls (So & Orme-Johnson, 2001). These results deserve the attention of school personnel in light of the widening achievement gap and the needs of underserved student populations. While the studies discussed in this section found TM to be effective in improving graduation rates as well as cognitive and affective measures, more research is needed to provide sufficient evidence.

Students of all ages encounter challenges that create stress. Students transitioning from high school to college are faced with stressors, such as the pressure to succeed and to form new relationships. In addition, anxiety may be greater due to the changing nature of college students’ schedule. Research shows that distress can be decreased in college student populations through the practice of TM (Burns et al., 2011) and that significant differences in Brain Integration Scale

scores (frontal coherence, alpha/beta absolute power ratios, timing/magnitude of brain preparatory responses) and sleepiness were seen after 10 weeks of TM practice (Travis et al., 2009). The Brain Integration Scale was created by Frederick Travis after results showed “changes in brain patterns during challenging cognitive tasks after the meditation session” (Travis et al., 2009). Travis, Arenander, and DuBois (2004) found that Brain Integration Scale scores positively correlated with emotional stability, moral reasoning, and inner directedness, and negatively correlated with anxiety in college students.

Another study conducted over a two-semester period showed a significant decline in experiences of stress, anxiety, depression, and perfectionistic thoughts among students who practiced TM (Burns et al., 2011). The practice of TM also led to significant increases in self-reported mindfulness, which were defined as low levels of anxiety and depressive symptoms and high levels of self-esteem (Tanner et al., 2009), compared to controls. Due to the particularly stressful nature of attending college, TM appears to safeguard students from the effects of stress. These studies support the value of college students practicing TM.

Finally, college students who participate in TM and a special curriculum may experience greater improvements in intelligence, creativity, and they may also develop higher potential. The results of Fergusson et al.’s (1995) study suggested that the Vedic Science curriculum enhances cognition. The Vedic Science curriculum included the practice of TM twice a day in large groups, the study and application of natural health practices from the Vedic tradition, and the study of the principles of Vedic Science. Students who participated in this program showed significant increases in nonverbal intelligence over a 3-month period compared to controls.

However, further research is needed to determine whether the combination of the Vedic Science curriculum taken together or independently further enhances cognition. Several

longitudinal studies of varying lengths (2 years to 10 years) examined the Vedic Science curriculum by examining outcomes, such as cognitive ability (Dillbeck et al., 1986) and self-development (Chandler et al., 2005). First, Cranson et al. (1991) attempted to test the theoretical model from developmental neurobiology, which states that enriching experiences stimulate neural growth. In the study, students at Maharishi International University in Iowa (Vedic Science curriculum) who were enrolled in psychology as part of the required curriculum were the experimental group, while the comparison group consisted of students at the University of Northern Iowa enrolled in a psychology course as an elective. While subjects were not randomly assigned, one could argue that random assignments are rare in the social sciences (Herek, 2012). Results of this study revealed that regular practice of TM and the TM-Sidhi program in a university setting results in significant improvements in cognitive performance when compared to controls (Cranson et al., 1991). Ten-year longitudinal data show that TM participants increased significantly in ego development compared to three control groups, and they also showed increases (i.e., to very high levels) of principled moral reasoning (Chandler et al., 2005).

Reducing stress and addressing both the cognitive and affective needs of community college students may prove to increase cognitive performance and increase graduation rates. According to Bloom (1976) and Dillbeck et al. (1986), cognitive and affective characteristics of students account for 75% of achievement measures, whereas the quality of instruction accounts for 25%. Therefore, the significant increase in fluid intelligence (i.e., ability to successfully reason and focus on task requirements) and field independence (i.e., predicts academic achievement) for students practicing TM may well improve academic achievement. Dillbeck et al.'s (1986) results showed that students displayed longitudinal increases in intelligence and field independence with an increase in nine IQ points. With such promising results, educators should consider

implementing the TM program in community college settings. However, assessing levels of stress in community college students and their knowledge and attitudes toward meditation is necessary before the implementation of such a program can be considered.

### **Summary**

Overall, this chapter reviewed literature concerning the attributes of college students' stressors and the effects of mindfulness meditation and TM programs on stress, as well as various cognitive and affective variables and academic outcomes. Many community college students often feel overwhelmed by their academic, personal, and financial obligations, which contribute to increasing levels of stress. These obligations increase the likelihood that stress may negatively impact academic performance and health and wellbeing. Meditation is one solution that may result in significant benefits for students. Findings show it can reduce stress and improve academic achievement.

First, TM demonstrates statistically significant results on stress reduction and academic outcomes across age levels and grade levels and therefore may be most beneficial. Second, the TM program specifically demonstrated a higher percentage of statistically significant effects compared to napping or mindfulness meditation. Some researchers believe that longer-term practice of TM may result in advanced academic performance. While large-scale evaluative studies of TM program in college student populations are needed, the effects of TM are promising for reducing stress and improving cognition and academic performance in student populations.

Students may be well served by learning an ancient, secular meditation practice called TM. Based on the evidence, TM appears to require less training and is taught by certified TM instructors who also are long-time meditators. Students practicing TM spend 10-20 minutes meditating twice daily. The time spent practicing TM is much shorter compared to the time

required for mindfulness interventions, which include deep breathing exercises, yoga, and daily practice using audiotapes. As such, it may be that the instruction and practice of TM is a better fit for students and better suited for use in the community college setting. Students who often report significant levels of stress may have little room to add the requirements of a mindfulness meditation practice. Yet, these students likely need the benefits of meditation practice due to significant levels of stress. Prior to implementing any program, however, more needs to be understood regarding community college students' stress levels, as well as their knowledge and attitudes about meditation.

The next chapter provides the methodology used for this dissertation study. As such, the reader finds the research questions and hypotheses, sampling, data collection and analysis, and ethical considerations.

### **Chapter III: Methodology**

The purpose of this descriptive survey study was to assess levels of stress in community college students and their beliefs toward the use of meditation. This could lead to the identification and implementation of a new program for community college students that may reduce stress and improve academic performance and graduation rates. This chapter will outline the research design of this study. It will also present the research questions and expected hypotheses. Then, the population and the procedure used for sampling and determining sampling size are explained. Next, the survey design is discussed. Before concluding with ethical considerations, the collection of data, the procedures for data analysis, and the issues of validity, reliability, and generalizability are addressed.

#### **Research Questions and Hypothesis**

The purpose of this research is to assess levels of stress in community college students and their beliefs toward the use of meditation. The study was guided by one overarching research question and two subquestions. Three hypotheses were used to answer the research questions.

**Overarching research question.** Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low)?

#### **Subquestions.**

1. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and gender (i.e., male and female)?
2. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and age segment (18-23 [traditional] and 24+ [nontraditional] students)?

**Null hypotheses.** The null hypotheses are presented below.



**H<sub>0</sub>1:** Community college students' beliefs about meditation do not vary according to their level of stress (i.e., high, moderate, low).

**H<sub>0</sub>2:** Community college students' beliefs about meditation do not vary according to level of stress (i.e., high, moderate, low) and gender (i.e., male and female).

**H<sub>0</sub>3:** Community college students' beliefs about meditation do not vary according to level of stress (i.e., high, moderate, low) and age segment (18-23 [traditional] and 24+ [nontraditional] students).

**Operational variables.** This study involved one primary independent variable with three categories of stress (high, moderate, low). Stress level was to be categorized into high, moderate, and low based on an empirical assessment tool (the PSS-14). However, students did not score low on the PSS-14; therefore, there were two levels of stress used in analyses: moderate and high. There were also two secondary independent variables. The first was gender with two categories (male and female), and the second was age classification. Age classification had two categories (traditional and nontraditional). The dependent variable used in this study was beliefs toward meditation.

### **Population and Sampling**

The research site for this study was one open-access community college with a total of three campuses. The three campuses (rural, urban, and suburban) are located in the Washington DC area, where the researcher is an English professor. This community college serves nearly 60,000 students a year through both credit and noncredit programs. With approximately 32% of the student body born in another country, it is one of the most diverse community colleges in the country. The percent of nonwhite enrollment in fiscal year 2014 was approximately 73%, with the following distribution: 20% Hispanic, 26% Black/African American, 10% Asian, 13%

Foreign/nonresident alien, 1% American Indian, 1% Native Hawaiian and 2% multiple races, where approximately 46% were males and 54% were females (Maryland Higher Education Commission, 2016). Approximately 25% of students are first generation college students. A student is classified as first generation if neither parent attended college (Maryland Higher Education Commission, 2016). Nearly 30% of students qualify for and receive Pell grants because of their low socioeconomic status, and 60% of the students have developmental education needs and are required to complete remedial coursework prior to enrolling in college level courses (Maryland Higher Education Commission, 2016).

The research site was selected for several reasons. First, community college students are more likely to experience stressors, and thus are more likely to need the benefits of a meditation program than students attending 4-year colleges. Second, there is sufficient sample size necessary for utilizing survey research methods. Third, the convenience of the research site allows the researcher to connect theory to practice, to add to the scholarly literature, and to influence policy and practice without significant time constraints and costs.

A sample of convenience was utilized. Participants for the study consisted of all students enrolled in English 102 during the spring 2017 semester (N=3031). However, forty-two students enrolled in the researcher's English 102 sections were excluded from participation in the study, and therefore the total number of participants who received the request to participate included (N=2989). English 102 is a required class at the community college. Because these students were enrolled in an English composition course, which students are required to take, it allowed for a heterogeneous representation of the student body.

## Method

The research method was a descriptive and cross-sectional survey. The primary instrument for data collection was a questionnaire. The questionnaire included closed- and open-ended questions.

**Perceived levels of stress.** One of the independent variables of the study was perceived level of stress. The instrument that was used to gather data on students' perceived stress is the PSS-14 developed by Cohen et al. (1983) (Appendix F). This tool was selected because of its simplicity (14 items), because it is widely-used to assess perceptions of stress over the preceding month, because of its reliability, with coefficients .75 to .91, and because it has been validated with college students (Cohen et al., 1983).

The PSS-14 is a measure of the level of stress perceived by the respondent. According to Cohen (2015), the developer of the measure, researchers may use the PSS-14 free of charge for academic research. Each item is designed to determine how unpredictable, uncontrollable, and overloaded students find their lives (Cohen et al., 1983). Students rate items on a Likert scale in which responses range from 0 = *Never* to 4 = *Very Often*. For example, one item states, "In the last month, how often have you found that you could not cope with all the things you had to do?" Another item states, "In the last month, how often have you been upset because of something that happened unexpectedly?" (Cohen et al., 1983).

Three categories of stress are identified by the instrument's author: A score of less than 20 equals low stress; scores ranging from 20 to 36 equal moderate stress; and scores over 36 equals high stress (Cohen et al., 1983). In the current study, students were categorized according to these three categories of stress to test hypotheses related to levels of stress and beliefs about meditation. As mentioned previously, students fell into two categories, moderate and high stress, and therefore

these two categories were used in analysis.

**Meditation beliefs questionnaire.** Students were also asked to complete additional questions that focused on beliefs about meditation (Appendix F); the dependent variable of the study. There are two scales that composed this instrument. The knowledge scale has 10 items and had a Cronbach's reliability coefficient of .89, which is quite high. The second subscale, perceptions, consists of eight items, and it achieved a reliability coefficient of .72.

Students rate items on a 5-point rating Likert scale as well on the Beliefs about Meditation scale. The questionnaire also included open-ended questions. Fink (2011) stated that open-ended questions "are useful if you are interested in getting unanticipated answers or in learning about the world as your respondents really see it" (p. 36). Open-ended questions allow the researcher to discover opinions that may not have been thought of before, and per Fowler (2014) "respondents like the opportunity to answer some questions in their own words" (p. 88). Also, open-ended responses can be helpful to expand on and clarify closed responses, as they allow participants to create responses within their cultural and social experiences instead of solely the researcher's experiences (Creswell, 2012). Additionally, open-ended questions were used to corroborate findings; these questions were derived from Gryffin et al. (2014). The researcher had written permission from Peter Gryffin to use the questions (Appendix B).

Furthermore, respondents were asked to indicate their gender and age category. Students were also asked if they already practice meditation. Because the frequency of this latter variable was unknown, it was not incorporated into the research design. These data, however, were thought to be useful for follow-up research if the responses are sufficient. The complete survey instrument used for this study may be found in Appendix F.

## Data Collection

Before data could be collected, Northeastern University's Institutional Review Board (IRB) needed to approve the study (Appendix A). In addition, permission was requested and granted from Gryffin to use his questions in the survey (Appendix B). The IRB of the study site also needed to approve the study (Appendix C). Invitation to participate was sent to students with a consent form and a survey link. Students were informed that by clicking on the survey link, they were consenting to the specifics of the study laid out in the consent form (Appendix D). The survey was administered during the spring 2017 semester. It was delivered using a Survey Monkey link, an online survey tool through the college email system to reach all students enrolled in English 102 at one community college with three campuses. The researcher sent the link from the institution's college email system where she was enrolled as a doctoral student, and delivered it to English 102 students ( $N= 2989$ ) through their community college email address. The community college email addresses are the official means of communication for students at the college. According to Muijs (2011), this is important, as the credibility of the institution helps to improve response rates. In addition, a three-phase survey administration was used to further encourage high return rates (Creswell, 2012). All phases included a description of the study, a request for participation, and made explicit, that participation was completely voluntary and confidential according to Internal Review Board expectations. It was anticipated that the study's topic of stress would be considered a subject of interest to the community college student population and that they would therefore be more apt to complete the survey (Creswell, 2012). Finally, busy college students juggling academic and personal commitments were able to respond at any time that was convenient to them (Fowler Jr., 2014). Follow-up invitations to participate in online survey were also sent (Appendix E). It was noticed that the reminder helped to increase participation rates

during the second phase of the survey administration. Students who consented to participate accessed the online instrument (Appendix F).

### **Data Analysis**

The survey responses were downloaded from Survey Monkey into Excel. Then, they were converted into an SPSS file for statistical analysis. Additionally, the open-ended responses were categorized using the Health Belief Model according to perceived barriers, perceived threats, and perceived benefits. In this way, the researcher could review data and identify themes, including frequencies of responses and possibly further validate findings from Gryffin et al (2014) using a different college student population. The independent and dependent variables were labeled and given numeric coding. Descriptive statistics such as means and standard deviations of the measures were calculated (Fraenkel, Wallen, & Hyun, 2015).

The PSS-14 score was computed following the author's template to produce the levels of stress for student classification of scores into high, moderate, and low. Then, the null hypotheses were tested using analysis of variance (ANOVA) procedures. For the hypothesis that had one independent variable (stress level), a one-way ANOVA procedure was used. The hypothesis with two independent variables (level of stress and gender or age category) a 2 X 2 ANOVA was used. If any statistical significance was found at the  $p < .05$  level, post hoc procedures were computed with two or more groups.

### **Validity, Reliability, and Generalizability**

The most significant threats to the validity of the instrumentation process in cross-sectional survey designs include the use of self-report questionnaires and unconscious bias on the part of the data collector (Fraenkel et al., 2015). To minimize the effects of bias, participants responded via an internet survey. This helped to avoid bias that could result from students reporting their

responses to the researcher with the wish to please the researcher. Also, researchers sometimes create bias through their body language or in the way they ask the questions. An internet survey minimized that effect as well. The use of self-report measures may introduce social desirability bias, in which respondents would rather not report accurately or admit to something that is very embarrassing. This threat was also limited by using self-administered data collection through a Survey Monkey link. According to Fowler (2014), when interviewers are not asking the questions, this reduces social desirability bias. In addition, social desirability bias was further reduced by removing the names of the students who were enrolled in the researcher's English 102 sections. These students did not receive the email with the Survey Monkey link.

Other significant threats to the study's research design includes response bias. In order to limit the problem of nonresponses, the questionnaire was designed to be brief (less than 10 minutes). This served to minimize the effort that respondents would need to make in completing the survey. The researcher also utilized the three-step phase over a 6-week period and delivered the link through the college email system (Creswell, 2012; Muijs, 2011). Another threat included item nonresponse, which occurs when respondents leave a question unanswered (Fraenkel et al., 2015). In this case, the researcher decided to leave the data of respondents out of the analysis. According to Fowler (2014) item nonresponse rates are typically low. As previously mentioned, the use of the PSS-14 minimizes the validity and reliability threats. In addition, the PSS-14 was designed for community samples whose members have at least a junior high education, and the items are easy to understand and the response simple to grasp (Cohen et al., 1983). Also, threats were minimized because the researcher tested (Creswell, 2012) the questionnaire with a small number of colleagues outside of the community college to ensure question clarity. The group's feedback was used to modify one definition and the wording of two questions.

Survey research is well suited for educational research, identifying attitudes, and generalizing findings. According to Muijs (2011) “because survey research does not set up an artificial situation like an experiment, it is easier to generalize finding to real-world settings, as this is where the research takes place” (p. 39). This study utilized a convenience sample of students at one college, which could mean that the population has unique characteristics which limit the generalizability of the findings. However, in this study, students attended courses on three different campuses (one rural, one suburban, and one urban) of the same college, with each having a different culture and climate. Also, the students are required to take English 102, which allows for greater heterogeneity than when students are enrolled in an elective. Therefore, it is more likely that the findings will be representative of the population. On the other hand, the results may not be generalizable to other students, such as 4-year college students with differing characteristics.

### **Ethical Considerations**

The study was submitted to the Internal Review Board (IRB) at Northeastern University and to the study site. The IRB reviews research studies involving human subjects. IRB approval was obtained from both the researcher’s degree granting institution, Northeastern University (Appendix A), as well as from the study site (Appendix C). The study site approved and granted an IRB approval for human subjects research exemptions because the scope of the research did not identify, interview, and/or observe participants for experimental reasons. Additionally, the researcher made sure that all materials were understandable to the participants. Participants were given a brief, accurate description of the purpose of the research and a detailed statement regarding the way in which the anonymous answers were protected. In addition, participants were assured that any reports or publications would only contain group data. They were also assured that participation was voluntary and that they were free to skip any question they did not wish to



answer (Fowler Jr., 2014). The above IRB protocol was reinforced during all phases of survey administration.

### **Summary**

The design was a descriptive survey study utilizing questionnaires delivered to students through an online survey tool using college system email. A sample of convenience was utilized by using all students enrolled in English 102 at one community college in the Washington DC area. The research tested three hypotheses through descriptive statistics and one-way and two-way analysis of variance to determine whether there were any statistically significant differences between the means of two or more groups. The researcher followed Northeastern University's doctoral research approval and defense protocol, prepared IRB applications, prepared a questionnaire using online survey tool, and obtained approval from Northeastern University and from the study site to conduct this dissertation research.

## Chapter IV: Results

The purpose of this descriptive survey research was to assess levels of stress in community college students and their beliefs toward the use of meditation. Robust literature shows that meditation helps reduce stress in students (Barnes et al., 2003; Colbert, 2013; Dillbeck, 1977; Kember, 1985; Nidich et al., 2011; Rosenthal, 2011; So & Orme-Johnson, 2001; Travis, 2009), yet there is limited literature on whether community college students would practice meditation even if they understood the benefits. The findings of this study were thought to provide an understanding of important characteristics and present conditions among community college students to determine if a new meditation program may work within a community college setting to reduce stress and improve academic performance. This chapter reports the results of the study. Descriptive and inferential statistics were used to test this study's hypotheses. The chapter will first present the research questions, then participants' demographic variables, followed by the findings of the hypothesis testing.

### Research Questions

This study was guided by one overarching research question and two subquestions.

**Overarching research question.** Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low)?

#### Subquestions.

1. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and gender (i.e., male and female)?
2. Do community college students' beliefs about meditation vary according to levels of stress (i.e., high, moderate, low) and age segment (18-23 [traditional] and 24+ [nontraditional] students)?

## **Participant Demographic Variables**

The population for this study consisted of 2,989 students enrolled in English 102 during the spring semester of 2017 at one community college. Each of the 2,989 students was sent an initial email and follow up emails containing a brief description of the research study, a written acknowledgement of their rights and assurance of privacy regarding their information, and a link to the online survey. Submitting the online survey constituted their consent to participate in the study. No remuneration was provided for completion of the survey. Of the number of students who were sent the initial email, three emails were returned to the researcher as undeliverable. The remaining eligible convenience sample consisted of 2986 students. Students had access to the survey for 6 weeks. At the end of 6 weeks, all the data were transferred from Survey Monkey to an Excel spreadsheet and then converted to an SPSS data file. During coding, a total of 36 questionnaires were removed from analysis because they were only partially complete. The final sample was 221, which constitutes a response rate of 7%.

The sample of 221 community college students was largely female. Approximately, 146 (66%) were female and 74 (34%) were male. Also, a majority were students of traditional college age, between the ages of 18 to 23. Exactly 170, or 77%, were 18 to 23 years of age and 51 (23%) were over 23 in age, which was defined in this study as nontraditional age. In terms of stress levels, the sample reflected stress levels of a moderate to high level. Specifically, 151 (68%) had scores on the PSS-14 of between 20 and 35, which indicates “moderate” stress levels. Seventy students (32%) had scores on the PSS-14 over 35, which indicates a “high” level of stress. Therefore, there were two categories of stress for the independent variable of stress levels.

## Hypothesis Testing

**Hypothesis 1.** The first null hypothesis was as follows:

H<sub>0</sub>1: Community college students' beliefs about meditation do not vary according to their level of stress (i.e., high, moderate, low).

A one-way analysis of variance (ANOVA) procedure were performed to test Hypothesis 1. The independent variable (IV) was stress levels, while the dependent variables (DV) were the two scales of the Meditation Beliefs Questionnaire: Knowledge and perceptions. Although originally it was anticipated to be three levels of the independent variable (IV), stress levels, the students fell into two categories: moderate and high. There were no students that scored in the low category of stress. Table 1 reports the descriptive statistics for the two groups on the dependent variables.

Table 1

*Descriptive Statistics for the IV and DV of Hypothesis 1 (N = 221)*

Stress level	N	Knowledge		Perceptions	
		M	SD	M	SD
Moderate	151	37.13	5.48	21.70	4.79
High	70	39.57	7.62	22.59	5.24
Total	221	37.91	6.32	21.98	4.94

Results of the ANOVA showed a statistically significant difference between the two stress levels of students on the knowledge scale when the ANOVA procedure was executed. The group with high stress levels had significantly more knowledge than those with moderate stress levels on the actual benefits of meditation. The null hypothesis was rejected for the knowledge scale. However, when content on perceptions was assessed, the groups were similar. There were no significant differences on perceptions about meditation. The null was accepted for the perceptions scale. Table 2 presents the results of the analysis to test Hypothesis 1.

Table 2

*Results of ANOVA Performed to Determine Differences in Stress Levels and Knowledge and Perceptions of Meditation*

Dependent variable	<i>F</i>	<i>df</i>	<i>p</i>	eta
Knowledge of meditation	7.32	1,219	.00**	.03
Perceptions of meditation	1.52	1,219	.22	.00

*P* < .01\*\*

When individual items on the knowledge subscale were investigated further, there were statistically significant differences on key areas that accounted for the higher knowledge scale score. An independent samples *t*-test was conducted for the two groups and results documented the high stress group had more knowledge about the benefits of meditation. Specifically, they had more knowledge that practicing meditation could do the following:

1. Help increase academic performance and achievement
2. Lower blood pressure
3. Reduce stress
4. Reduce test anxiety

**Hypothesis 2.** The second null hypothesis was as follows:

H<sub>0</sub>2: Community college students' beliefs about meditation do not vary according to levels of stress (i.e., high, moderate, low) and gender (i.e., male and female).

A 2 x 2 ANOVA was executed for the two scales of the Meditation Beliefs Questionnaire, knowledge and perceptions. The two IVs were stress level and gender, whereas, the DVs were knowledge and perceptions, respectively. Stress levels fell into two categories: moderate and high and gender had two categories, male and female. Table 3 presents the descriptive statistics for the

two groups by gender on the dependent variables.

Table 3

*Descriptive Statistics for Hypothesis 2*

Stress level by gender	N	Knowledge of meditation		Perceptions of meditation	
		M	SD	M	SD
Moderate					
Male	58	36.52	5.48	22.37	5.41
Female	93	37.52	5.48	21.28	4.34
High					
Male	16	37.31	7.83	24.19	4.10
Female	53	40.15	7.54	22.06	5.51
Total	220	37.87	6.32	21.97	4.95

When content on knowledge and perceptions were assessed, the groups were similar regardless of their gender. When gender was considered in the model, no significant differences were found in either knowledge of, or perceptions about, meditation. The null was accepted for both the knowledge and perceptions scales. See Table 4 for the results of the analysis for Hypothesis 2.

Table 4

*Results of ANOVA to Determine Differences in Stress Levels and Gender Regarding Knowledge and Perceptions About Meditation*

Dependent variable	F	df	p	eta
Knowledge of meditation	.80	1,216	.37	.00
Perceptions of meditation	.40	1,219	.53	.00

$p < .01^{**}$

**Hypothesis 3.** The third null hypothesis was as follows:

H<sub>0</sub>3: Community college students' beliefs about meditation do not vary according to level

of stress (i.e., high, moderate, low) and age category (18-23 and 24+/traditional and nontraditional students).

A 2 X 2 ANOVA procedure was performed for the Meditation Beliefs Questionnaire. This instrument has two scales, knowledge and perception. The two IVs were stress level of students, with two categories, moderate and high, and age segments, with two categories, traditional and nontraditional. The DVs were knowledge and perceptions, respectively. Table 5 presents the descriptive statistics for the two groups by age segment on the DVs.

Table 5

*Descriptive Statistics for Hypothesis 3*

Stress level by age	N	Knowledge of meditation		Perceptions of meditation	
		M	SD	M	SD
Moderate					
Traditional	116	36.67	5.29	22.03	4.75
Nontraditional	35	38.66	5.90	20.63	4.84
High					
Traditional	54	39.41	7.61	22.57	5.55
Nontraditional	16	40.13	7.91	22.63	4.16
Total	221	37.91	6.32	21.98	4.94

When the groups were assessed according to stress and age segment, the groups were similar regardless of their age. There were no differences on either knowledge of, or perceptions about, meditation. The null was accepted for both the knowledge and perceptions scales. Please see Table 6.

Table 6

*Results of ANOVA to Determine Differences in Stress Levels and Age Segment Regarding Knowledge and Perceptions About Meditation*

Dependent variable	<i>F</i>	<i>df</i>	<i>p</i>	eta
Knowledge of meditation	.35	1,217	.55	.00
Perceptions of meditation	.73	1,217	.39	.00

*p* < .01\*\*

**Additional analysis.** Because a proportion of the sample reported they practiced meditation ( $n = 24$ ), a chi-square analysis was conducted to see if stress levels were significant among those who meditated in comparison to ones who did not. It was important to determine whether meditation had the potential to influence results of the study. Findings showed that there were no significant differences between the two groups,  $X^2(1, N = 213) = 1.53, p = .22$ . See Table 7 for the results of this analysis.

Table 7

*Results of Chi Square Analyses Showing Differences in Stress Levels between those Who Meditate and Those Who Do Not Meditate*

Stress level	Meditate		Do not meditate	
	<i>N</i>	%	<i>n</i>	%
Moderate	19	79	126	67
High	5	21	63	33
Total	24	100	189	100

*Note.* Chi Sq. = 1.53, *df* = 1, *p* = .22



Seventy nine percent of those who meditated had a moderate level of stress while 67% of those who did not meditate had a moderate level of stress. Twenty-one percent of those who meditated had a high level of stress while 33% of those who did not meditate had a high level of stress. The same proportion 24 (11%) responded that they were uninterested in meditating. On the other hand, 165 (78%) students indicated either a possible or definite willingness to practice if more information were forthcoming. Given the levels of stress self-reported by the sample, this stress reduction technique might be of benefit to community college students.

### **Secondary Analysis**

Secondary data analysis of open-ended responses consisted of a theory driven thematic analysis using the health belief model (HBM) for clustering based on constructs of the HBM: perceived barriers, perceived threats, and perceived benefits. First, the researcher utilized *in vivo* coding to create codes using the respondent's actual words (Creswell, 2012; Miles, Huberman, & Saldana, 2014). As much as possible, the codes were the words used by respondents and honored the respondent's voice (Miles et al., 2014). Themes emerged from the open-ended responses. They were categorized and frequencies of responses were recorded. In this study, the HBM was used to categorize the codes and determine themes; perceived barriers, perceived threats, and perceived benefits. Table 8 shows the open-ended survey results and categorization of responses based on thematic analysis.

Table 8

*Response Frequencies Related to Perceived Threats, Benefits, and Barriers (N = 221)*

Category	N	%
Perceived Threats (Reported Stressors)		
School	119	54
Assignments and Tests	67	30
Grades	33	15
Relationships	69	31
Money	57	28
Job	55	25
Choosing career/Future	46	21
Health	28	13
Perceived Benefits		
Offers relief from stress		
Calm/Peace	169	76
Relaxing/Relaxation	114	51
Specifically stress relief-stress free	63	29
Clarity/Focus	47	21
Yoga	21	10
Self-control	17	8
Perceived Barriers to Meditating		
Time factor		
Time consuming to practice	59	27
Fitting meditation into schedule	18	8
Lack of knowledge about meditation	24	11
Difficult to meditate	14	6
Sitting Still Comfortably	10	5
Religious reasons	8	4

Students reported six stressors with the largest reported stressor identified as school ( $n = 119$ ; 54%), with assignments ( $n = 67$ ; 30%) and academic performance ( $n = 33$ ; 15%) constituting the greatest concerns under this theme. The benefits were perceived to be the stress-relieving aspect of meditation. Specifically, students reported, “calm/peace” ( $n = 169$ ; 76%),

“relaxing/relaxation” ( $n = 114$ ; 51%), and “stress free/stress relief” ( $n = 63$ ; 29%) as among important benefits. Among the barriers that were identified by students, the time factor ( $n = 73$ ; 35%) was the largest perceived barrier, and included time consuming to practice and fitting meditation into the schedule. Another potential barrier identified by students was a “lack of knowledge about meditation” ( $n = 24$ ; 11%). Table 9 has comparison of perceived barriers, threats, and benefits as frequency of responses.

Table 9

*Comparison of Perceived Barriers, Threats, and Benefits as Frequency of Responses*

	Barriers	Threats	Benefits
Total number of responses for each construct group	133	474	431

### Summary

This research tested three hypotheses through descriptive statistics and a one-way and two-way analysis of variance (ANOVA) to determine whether there were any statistically significant differences between students’ stress levels (moderate and high) and the two scales of the Meditation Beliefs Questionnaire: knowledge and perceptions. Statistical analyses revealed that for Hypothesis 1, students with high stress levels had significantly more knowledge than those with moderate stress levels on the actual benefits of meditation. Independent  $t$ -tests were conducted to further investigate individual items on the knowledge subscale, and results showed that the high stress group had more knowledge that practicing meditation could increase academic performance and achievement, lower blood pressure, reduce stress, and reduce test anxiety. The null hypothesis

for the knowledge subscale was rejected. In this study, community college students' knowledge of the benefits of meditation did vary according to stress level. However, when students' perceptions of meditation were assessed, there were no significant differences between students of varying levels of stress and their perceptions of meditation, and the null hypothesis for the perceptions scale was accepted. In this study, community college students' perceptions of meditation did not vary according to stress level.

For Hypothesis 2, a 2 X 2 ANOVA procedures was executed for the two subscales of the Meditation Beliefs Questionnaire: knowledge and perceptions by stress level (moderate and high) and gender (male and female). The dependent variables were knowledge and perceptions. Regardless of gender, no significant differences were found, and the null hypothesis was accepted. Therefore, community college students' beliefs about meditation do not vary according to level of stress (moderate and high) and by gender (male and female).

For Hypothesis 3, a 2 X 2 ANOVA procedures was executed for the two subscales of the Meditation Beliefs Questionnaire: knowledge and perceptions by stress level (moderate and high) and by age segment (traditional 18-23 and non-traditional 24+). When the groups were assessed, the groups were similar regardless of their age segment and the null hypothesis was accepted. As such, in this study, community college students' beliefs about meditation do not vary according to level of stress when their age classification is added to the model.

The HBM (perceived threats, perceived benefits, and perceived barriers) was used for thematic analysis of open-ended responses. Students reported six stressors or perceived threats. More than half of the students reported that their greatest concern included school, assignments, tests, and grades. Benefits of meditation, which most students identified, included its stress-relieving aspects, such as calming, relaxation, and stress relief. Among the barriers that were

identified by students, the largest perceived barrier was the time factor associated with meditation. These barriers included finding the time to practice meditation and fitting it into their schedule. Another potential barrier identified by students was a lack of knowledge about meditation. In Chapter V, a summary and a discussion of the findings will be presented. The last section of Chapter V includes implications for the field, limitations of the findings, and recommendations for future research.

## Chapter V: Discussion of the Findings

The purpose of this descriptive survey research was to assess levels of stress in community college students and their beliefs about meditation in one community college in Maryland. This study extends current research on levels of the self-reported stress community college students experience and their beliefs about meditation utilizing an online survey tool. The literature on the topic suggests that community college students are more likely than 4-year college students to experience stress, and they are also less likely to earn a certificate or degree (Green, 2006; Kena et al., 2015; Ryan, 2009). Specifically, community college students' characteristics are likely to be linked to stress, which can impede academic success (Bailey, 2009; Chickering & Reisser, 1993; Jenkins & Weiss, 2011; Joshi et al., 2009). These characteristics often include low socioeconomic status, single parent status, being an underrepresented minority, English language learner, and/or requiring remedial classes prior to enrolling in college level coursework (Bailey, 2009; Jenkins & Weiss, 2011; Phillippe, 2015; Provasnik & Planty, 2008). In spite of these demographic characteristics associated with stress in students, there is limited literature regarding the impact of levels of stress on community college students' academic success (Floyd, 2003; Ryan, 2009; Sanlo & Espinoza, 2012) and their beliefs about meditation (Gryffin et al., 2014).

Meditation has been used in a variety of school settings, and evidence suggests that it not only reduces stress but improves academic performance (Barnes et al., 2003; Colbert, 2013; Dillbeck, 1977; Kember, 1985; Nidich et al., 2011; Rosenthal, 2011; So & Orme-Johnson, 2001; Travis, 2009). As such, this study focused on whether beliefs of meditation vary according to stress levels. The study was conducted in hopes that the findings would add to the literature, advance the discussion of stress and the needs of students, and to understand a student's acceptance of, and decision to participate in, meditation practices. This chapter will discuss the findings of the

hypothesis testing in the context of previous research. This discussion will be followed by implications for the field, limitations of the findings, and recommendations for future research.

### **Hypothesis Testing**

This section will discuss the results according to the findings of the hypotheses testing.

**Hypothesis 1.** Hypothesis 1 was conducted to determine whether community college students' beliefs about meditation would vary among groups with differential levels of stress. A one-way ANOVA was conducted to test Hypothesis one. Originally, the students were expected to fall into three groups (i.e., low, medium, high) on the PSS-14 instrument, but no students scored in the low category of stress. Therefore, respondents were classified into two groups: moderate stress ( $n = 151$ ) and high stress ( $n = 70$ ). Students with moderate stress ( $M = 37.13$ ,  $SD = 5.48$ ) differed from students with high stress ( $M = 39.57$ ,  $SD = 7.62$ ) in their knowledge of mediation, and the differences between these groups was statistically significant,  $F(1,219) = 7.32$ ,  $p = .00$ . Further, testing included independent samples  $t$ -tests for the two groups, and results showed that the high stress group had more knowledge about the benefits of meditation. Specifically, the students with high stress had greater knowledge that meditation could increase academic performance and achievement, lower blood pressure, reduce stress, and reduce test anxiety. It should be noted that although students with high stress scored significantly higher on knowledge of meditation, there were no differences between moderate and high stress groups on the perceptions subscale.

The findings of the first hypothesis indicated that students who reported high perceived stress levels had more knowledge about the benefits of meditation. One possible explanation for this could be that students with higher levels of stress were more motivated than students with moderate stress to find ways to cope with their stress, and therefore, they may have been more open to learning about meditation. This interpretation is in keeping with previous research. For

example, in a survey study of community college students ( $N = 212$ ) on perceived stress, Pierceall and Keim (2007) found that students who reported an interest in information on stress reduction perceived they were experiencing more stress than students who were not interested. Pierceall and Keim's sample was similar to that of the current study; both included more female respondents and more traditional age respondents. In addition, the proportion of moderately stressed students in both studies were somewhat similar, with 75% of Pierceall and Keim's sample showing moderate stress levels and 68% in the current study reporting moderate stress. In spite of being more interested in stress reduction, when the community college students ( $N = 212$ ) were asked about ways they coped with stress, no one reported that they practiced meditation (Pierceall & Keim, 2007), whereas in this study, only a few reported practicing meditation ( $n = 24$ ), which could indicate that the time factor (i.e., fitting meditation into one's schedule) and/or lack of knowledge about how to meditate are perceived barriers. These perceived barriers, which were among the findings of the qualitative portion of this study, may be addressed through education regarding the differences in time commitment between mindfulness meditation and TM.

One explanation for the time factor could be attributed to Kabat-Zinn (1994) who is explicit about the effort, energy, and discipline required for one to learn and practice mindfulness meditation. Therefore, students may unknowingly attribute characteristics, such as the time intensive commitment of mindfulness meditation, to all meditation techniques. If this is the case, students would likely benefit from understanding the differences among different meditation techniques. It is important to note that 78% of community college students in this study reported either a possible or definite willingness to practice meditation if more information were provided. Notably, according to one survey study, community college students reported that participation in prayer or meditation was among their top four coping strategies (Miller et al., 2004).



**Hypothesis 2.** The second hypothesis was tested to determine whether community college students' beliefs about meditation varied according to level of stress and gender (i.e., male and female). A two-way ANOVA was conducted to determine whether beliefs about meditation would vary by stress level and gender. When content on the knowledge subscale and the perception subscale were assessed, the groups were similar regardless of their gender. This result seems to suggest that there are not major differences between genders when it comes to stress levels and beliefs about education. When looking at the means of these groups, males ( $M=37.31$ ,  $SD = 7.83$ ) and females ( $M = 40.15$ ,  $SD = 7.54$ ) in the high stress group scored slightly higher in knowledge of meditation than the males ( $M = 36.52$ ,  $SD = 5.48$ ) and females ( $M = 37.52$ ,  $SD = 5.48$ ) in the moderate stress level group. Additionally, females seemed to have a bit more knowledge than males. However, these differences were not significant. Based on the nascent literature regarding gender differences and stress and beliefs of meditation, more research is needed in this area.

**Hypothesis 3.** The third hypothesis was tested to determine whether community college students' beliefs about meditation would vary according to levels of stress and age segment (18-23 and 24+/traditional and nontraditional students). A 2 X 2 ANOVA was conducted to determine whether beliefs about meditation would be different for groups by stress level and age segment on the knowledge and the perception subscales of the Meditation Beliefs Questionnaire. The groups were similar, indicating that when students' age segment was added to the model there were no significant differences found between groups. This result was surprising given the literature on traditional and nontraditional students and stress. According to researchers, nontraditional age students often report stressors due to age, financial concerns, health concerns, and balancing family, work, and academic responsibilities (L. Johnson et al., 2000; Jones, 2017; Peterson, 2016; Ryan, 2009). However, it appears that in this sample, both nontraditional and traditional students

were experiencing stress. The qualitative results seem to suggest an overall concern with success in school. Students reported that they perceive school (54%) and its associated responsibilities, such as assignments, tests (30%), and grades (15%) to be the greatest stressor.

### **Qualitative Findings**

Open-ended responses were coded utilizing the HBM framework, which included perceived threats, or stressors, perceived benefits or meditation, and perceived barriers. The open-ended responses were used to clarify the quantitative analysis of the closed responses. Table 7 presents the results identified by this study's community college students. Students identified three stressors or perceived threats to be predominant: school, relationships, and money. Overall, students reported that they perceived school (54%) and its associated responsibilities, such as assignments, tests (30%), and grades (15%) to be the greatest stressor. These results are consistent with researchers who have found that community college students are stressed out about academic success (Bailey, 2009; Miller et al., 2004). Research has shown that community college students in general are unprepared for college level academic work (Bailey, 2009; Miller et al., 2004). In one study of urban Northeastern community college students ( $N = 161$ ), 40% were concerned about academic failure (Ryan, 2009). In addition, students from six different community colleges ( $N = 272$ ) rated academic success as the most challenging stressor (Miller et al., 2004).

Students in this study also reported that relationships (31%) and money (28%) were stressors. Similarly, results found by Miller et al. (2004) showed that students find the difficulties of balancing academic and personal life and paying for college to be challenging. In addition, in this study, 25% of students reported that their job was a stressor. Researchers have noted that characteristics of community college students often include students with the low socioeconomic status, veterans, young single parents, and students transitioning from high school who are more

likely to work at a part-time job or full-time job (Joshi et al., 2009). The demands of academics, relationships, and work commitments are the most pressing challenges and sources of stress for students in this study.

Twenty one percent of the students in this study indicated that choosing a career or major program of study was stressful. According to researchers, when students are undecided about a major, negative thought patterns often lead to frustration and stress (Starling & Miller, 2011). Specifically, results showed that community college students with undecided majors exhibited significantly more negative thinking than the average U.S. college student (Starling & Miller, 2011). Research presents evidence that students with clearly articulated goals not only have less stress, but higher persistence (Mason, 1998). Therefore, it appears that reducing students' stress may improve academic success.

In terms of students' perceptions of the benefits of meditation, students' responses fell into four categories of perceived benefits of meditation. The first category included beliefs that meditation overall is helpful in relieving stress: 76% reported meditation induces calm/peace, (51% reported it was relaxing and 29% specifically noted stress relief. These qualitative findings support the quantitative results of this study in which students who were under more stress had more knowledge about the benefits of meditation; specifically, that meditation reduces stress. Only 21% of the students reported that benefits of meditation include improved clarity or focus. Perhaps, educational opportunities should be provided for students to learn about the benefits of meditation for stress reduction, and improving focus and clarity, which are needed for academic pursuits. Additionally, the 24 students in this study who identified that they already practice meditation reported that meditation specifically improves sleep (n = 15), improves grades (n= 13), improves relationships (n=13), reduces stress (n=16) and reduces anxiety (n=18). If community college

stakeholders understood the benefits of meditation more completely, community colleges may provide opportunities for students to learn meditation.

Regarding perceived barriers, students reported time to be the top barrier to meditation. This finding is close to those found by Gryffin et al. (2014). Their study reported that 45% of students identified time as a perceived barrier; while in this study, 35% of the students did. Specifically, 27% of students in the current study reported that meditation was time consuming to practice, and 8% of the students reported that it would be difficult to find the time to fit in meditation practice into an already packed schedule. It may be doubtful that the students in this study were aware of the differences in time commitment required for mindfulness meditation and TM. For the purpose of this research, mindfulness meditation follows the protocol outlined previously, as developed by Jon Kabat-Zinn, and requires significant time for both learning the practice and engaging in the practice daily (i.e., weekly meetings, sitting in meditation, listening to CDs, homework exercises). If students are thinking specifically of this meditation practice, then it is likely that they do not have room in their tightly packed schedules. However, providing education sessions for community college stakeholders (i.e., administrators, faculty, staff, and students) would ensure that people have the necessary information about the different time commitments associated with different meditation practices. This would make it more likely that those who need the benefits of meditation the most could learn the TM technique. The TM technique requires less time both in terms of learning the technique and practicing daily. These findings show that TM is most likely a better fit for community college students' busy schedules and hectic lives.

## Implications

It appears students in this study are experiencing significant amounts of stress. All of the community college students surveyed reported moderate (68%) and high (32%) degrees of stress. No one scored in the low range. Community college students are most often described as at-risk due to the following characteristics: low socioeconomic status, work at least part-time, and need remedial course work (Bailey, 2009; Green, 2006; Kena et al., 2016). These risk factors are often associated with higher levels of stress (L. Johnson et al., 2000; Jones, 2017; Peterson, 2016; Ryan, 2009). According to Rosenthal (2016), stressors such as deadlines, financial pressures, and relationship concerns can be debilitating. This is in keeping with the qualitative results of this study. According to the qualitative results of this study, the students' sources of stress are mainly academic in nature. Moreover, high stress levels only compound the concern over academic success. High stress levels often block academic progress and can lead to health consequences. Yet, few community college stakeholders (i.e., administrators, faculty, staff) discuss the impacts of stress on students' academic success. Conversely, reducing stress levels in community college students may increase their academic success and overall wellbeing. Students who experience academic success are more likely to have higher salaries, break the cycle of poverty, and make a more significant contribution to a thriving economy than those who do not experience academic success. If community colleges are going to graduate more students with certificates or degrees and positively contribute to their overall success and general wellbeing, then reducing students' perceived stress levels is a must. Perhaps, providing education sessions about meditation and teaching students how to meditate (i.e., TM) would foster academic success and improve overall health and wellbeing. In this way, community colleges may not only improve graduation rates but aid students in developing lifelong health habits.

The results of this study indicate that community college students may benefit from learning about TM. Taken together, the qualitative findings support the quantitative reporting that students would consider the practice of meditation or be willing to practice meditation if information and training were provided. The quantitative results show that the higher the stress levels, the more knowledge students had about meditation. This means that higher stress levels may have motivated these students to learn about the benefits of meditation. It is likely from these results that community college students would engage in meditation practice with more knowledge about the practice and with a better understanding of how TM could fit into their busy schedules.

Based on the evidence from this study showing students' stress levels and their concerns about time and the difficulty of practicing meditation, TM appears to be a better fit for community college students than mindfulness meditation; TM requires significantly less time commitment to both learn and practice compared to mindfulness meditation. In addition, research shows that practicing TM not only reduces stress (Barnes et al., 2003; Knight, 1995) and reduces blood pressure (Anderson, Liu, & Kryscio, 2008), but it also appears to promote academic success and graduation rates (Colbert, 2013; Cranson et al., 1991; Dillbeck, 1977; Nidich et al., 2011; So & Orme-Johnson, 2001; Travis et al., 2009). Some may argue that mindfulness meditation allows for brief 5-minute sessions, and therefore it may be easier for students to incorporate into their schedules. However, in *Mindfulness in Plain English*, Bhante Henepola Gunaratana (2011) wrote about mindfulness meditation:

Meditation is not easy. It takes time and it takes energy. It also takes grit, determination, and discipline. It requires a host of personal qualities that we often regard as unpleasant and like to avoid whenever possible. We can sum up all of these qualities in the American word *gumption*. Meditation takes *gumption* (p. 1).

In contrast, TM has been referred to as “effortless” to practice (Shear, 2006, p. 25). Jonathan Shear (2006), the author of the TM chapter in the *Experience of Meditation: Experts Introduce the Major*

*Traditions*, wrote, “Perhaps the most striking feature of the TM technique is the simplicity and effortlessness of practice” (p. 25).

Notably, both types of meditation require training and regular practice if they are to be done properly. While it was not the goal of this research to ascertain whether the students understand the differences between TM and other forms of meditation, this lack of clarity and knowledge about the differences could be one explanation for why students reported that time was a major barrier to practicing meditation. To address the time factor barrier identified by students, community college stakeholders may want to examine ways to educate students about the different forms of meditation. They may consider incorporating TM instruction, as well as education about its ability to maximize students’ health and academic benefits, into regularly scheduled class sessions to make it possible to reach as many students as possible who might benefit from it. One idea would be to invite TM instructors to offer free introductory sessions on the benefits of TM during regularly scheduled English composition courses. Because these courses are required, and students take them as one of their first courses, this strategy would reach a broad range of students. Community college stakeholders also may consider offering brief introductory workshops for the purposes of educating students about the benefits of TM, commitments of time, and perhaps stories from students who utilize it. In addition, community college professors could incorporate this introductory TM session into the research component of an argumentative research and writing assignment. This would allow students to learn about meditation, ask any questions, and promote critical thinking about peer-reviewed research on meditation.

### **Limitations**

The current dissertation research had several limitations. First, the research design included a cross-sectional survey with self-report measures. Self-report measures could introduce social

desirability bias; however, as noted earlier, social desirability bias was likely reduced because the survey was self-administered and did not involve the researcher interviewing respondents. The design also included a convenience sample of community college students, and therefore the results may not apply to college students of 4-year colleges. In addition, the survey was administered to students at one community college setting. This setting may have unique regional demographics that are not representative of other areas of the country. Survey research has limitations as well. Students who volunteered for this study were self-selecting and this aspect of the study can affect results as well. While open-ended questions were included in the survey design, the study did not include focus groups, which would have helped answer a variety of questions, such as why students in the high stress category had more knowledge about the benefits of meditation than students with moderate levels of stress, or why there were no differences in beliefs of meditation and stress levels by gender and by age segment.

### **Recommendations for Future Research**

This research provides a foundation for future research. While students in this study reported moderate and high stress levels, previous research on students' perceived stress levels included a low stress category (Pierceall & Keim, 2007). It is unclear whether students' perceived stress levels in this study or the Pierceall and Keim (2007) study varied due to socioeconomic status or due to number of weeks remaining in a semester. Future studies could include the before mentioned variables. In addition, this survey assessed both beliefs of meditation and perceived stress levels. Future research could split the survey (i.e., topics) and collect information at the beginning and end of the semester. Also, future research could examine differences in students' stress levels and beliefs of meditation utilizing a mixed methods approach. This approach could include focus groups with follow-up questions to understand, for example, why students in the high



stress group had more knowledge about the benefits of meditation. While this study did not show differences in beliefs of meditation according to stress levels when gender and age segments were included, collecting demographic variables, such as program of study, and hours worked at a part-time or full-time job may provide more accurate information. For example, both males and females and traditional and nontraditional age students at this community college may have similar academic, personal, and financial goals and obligations. More research is needed in these areas.

### **Conclusion**

This study was the first of its kind regarding community college students' beliefs of meditation and perceived stress levels. The study assessed stress levels in community college students and their beliefs of meditation. The rationale for the study was that stress may impede academic success (Chickering & Reisser, 1993) and could have negative health consequences, which can negatively impact students' academic achievement and graduation rates. Often community college students are within the low socioeconomic status segment of the population and therefore would benefit by earning a certificate or degree to break the cycle of poverty (Beegle, 2003). Evidence shows that meditation reduces stress and improves academic performance (Barnes et al., 2003; Colbert, 2013; Nidich et al., 2011; Shapiro et al., 2012; So & Orme-Johnson, 2001; Travis et al., 2009).

Prior to implementing a meditation program for community college students, it is important for community college stakeholders (i.e., administrators, faculty, staff, students) to understand students' perceived levels of stress and beliefs about meditation. As of this writing, the researcher is aware of only two studies that were similar to this study. The first was on college students' perceived stress and beliefs of meditation (Gryffin et al., 2014), and the second was on students' perceived stress and intention to practice mindfulness meditation (Rizer et al., 2016). Both studies

examined university level college students. The findings of this study show that community college students' stress levels are in the moderate and high categories. The findings also show that the students with higher stress tend to have more knowledge of meditation, perhaps because they are interested in reducing their stress. Academic stress was considered one of the main sources of stress for these students, and time was considered the main barrier to meditating. Educating students of the benefits and the practicality of TM meditation would likely help students to reduce stress and help them be more successful academically. TM has been shown to reduce stress (Barnes et al., 2003; Knight, 1995) and promote academic success and graduation rates (Colbert, 2013; Cranson et al., 1991; Dillbeck, 1977; Nidich et al., 2011; So & Orme-Johnson, 2001; Travis et al., 2009). If meditation provides students with the ability to live up to their full potential, by reducing stress and promoting academic success, then community colleges can benefit by implementing meditation programs on their campuses.

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## Appendix A

### IRB Approval



# Northeastern

#### Notification of IRB Action

Date: March 29, 2017      IRB #: CPS17-02-17

Principal Investigator(s):      Chris Unger  
Pamela Wallentiny

Department:      Doctor of Education  
College of Professional Studies

Address:      20 Belvidere  
Northeastern University

Title of Project:      Stress Beliefs of Meditation among Community College  
Students

Participating Sites:      Montgomery College approval in file

Informed Consent:      One (1) unsigned consent

As per CFR 45 46.117(c)(2) signed consent is being *waived* as the research presents **no more than minimal risk** of harm to subjects and involves no procedures for which written consent is normally required.

DHHS Review Category:      Expedited #6, #7  
Monitoring Interval:      12 months

#### Approval Expiration Date: MARCH 28, 2018

#### Investigator's Responsibilities:

1. Informed consent form bearing the IRB approval stamp must be used when recruiting participants into the study.
2. The investigator must notify IRB **immediately** of unexpected adverse reactions, or new information that may alter our perception of the benefit-risk ratio.
3. Study procedures and files are subject to audit any time.
4. Any modifications of the protocol or the informed consent as the study progresses must be reviewed and approved by this committee **prior to being instituted**.
5. Continuing Review Approval for the proposal should be requested at least one month prior to the expiration date above.
6. This approval applies to the protection of human subjects only. It does not apply to any other university approvals that may be necessary.

C. Randall Colvin, Ph.D., Chair  
Northeastern University Institutional Review Board

Nan C. Regina, Director  
Human Subject Research Protection

Human Subject Research  
Protection  
Mail Stop 560-177  
360 Huntington Avenue  
Boston, MA 02115  
617.373.7570  
fax 617.373.4595  
northeastern.edu/hsrp

## Appendix B

### Permission to Include Gryffin's Questions in Study

Pete Gryffin <drgriffin@email.com> replied:

On Tue 3/7, 2017 at 7:46 PM

Wallentiny, Pamela L. Yes, you have my permission to use the questions below in your survey: "which aspects of meditation appeal to you" and "which aspects of meditation do not appeal to you?"

I look forward to seeing your results.

Best Regards, Dr. Gryffin

On Tue, Mar 7, 2017 at 4:42 PM, Wallentiny, Pamela L.  
<[pamela.wallentiny@montgomerycollege.edu](mailto:pamela.wallentiny@montgomerycollege.edu)> wrote:

Hi Dr Gryffin,

I wanted to give you a quick update.

I plan to use two of your questions in your below email and used in your previous study. The two questions are

"which aspects of meditation appeal to you" and "which aspects of meditation do not appeal to you?"

Will you reply to this email as to whether I may use these two questions? I plan to submit permission with my IRB approval.

Warm regards,

Pam

## Appendix C

### Permission to Conduct Study at Study Site

#### MONTGOMERY COLLEGE

*Office of Institutional Research & Effectiveness  
Institutional Review Board*

March 22, 2017

#### MEMORANDUM

TO Pamela Wallentiny

FROM Lauren Walker *for Robert Lynch, IRB Chair and Director OIRE*


SUBJECT Institutional Review Board Approval

We have reviewed your application to conduct the study – *Stress and the Beliefs of Meditation Among Community College Students* and gladly **approve** the application. This project falls well within the scope of research as “exempt” according to “45CFR 46.101(b) – *Category 2.*”

Additionally, just a reminder, it is the principal investigator’s responsibility to obtain the contacts. In other words, the IRB is not in a position to distribute surveys or obtain participation and assistance from faculty members for survey distribution.

We wish you a successful project with positive outcomes. Our staff will gladly assist you in any way our Research Office might be of help. If it’s convenient for you, we would very much appreciate obtaining a copy of your findings when the project is complete.

Kind Regards,



For Robert Lynch



## Appendix D

### Consent Form



#### UNSIGNED CONSENT DOCUMENT FOR WEB-BASED ONLINE SURVEYS

Northeastern University, Department of: Education

**Name of Investigator(s):** Principal Investigator, Dr. Chris Unger, Student Researcher Pamela L. Wallentiny  
**Title of Project:** *Stress and the Beliefs of Meditation among Community College*

#### Students Request to Participate in Research

Dear Students,

I would like to invite you to participate in a web-based online survey. I am a student researcher and this survey is part of a research study whose purpose is to find out about stress and the beliefs of meditation among community college students. This survey should take about 5 – 9 minutes to complete. We are asking you to participate in this study because you are a community college student. You must be at least 18 years old to take this survey.

The decision to participate in this research project is voluntary. You do not have to participate and you can refuse to answer any question. Even if you begin the web-based online survey, you can stop at any time. There are no foreseeable risks or discomforts to you for taking part in this study. There are no direct benefits to you from participating in this study. However, your responses may help us learn more about college students' perceived stress and beliefs about meditation. You will not be paid for your participation in this study.

**Your part in this study is anonymous to the researcher. However, because of the nature of web based surveys, it is possible that respondents could be identified by the IP address or other electronic record associated with the response. Neither the researcher nor anyone involved with this survey will be capturing those data. Any reports or publications based on this research will use only group data and will not identify you or any individual as being affiliated with this project.**

Your part in this study will be handled in a confidential manner. Any reports or publications based on this research will use only group data and will not identify you or any individual as being affiliated with this project.

**If you have any questions regarding electronic privacy**, please feel free to contact Mark Nardone, NU's Director of Information Security via phone at 617-373-7901, or via email at [privacy@neu.edu](mailto:privacy@neu.edu).

**If you have any questions about this study**, please feel free to contact Pamela Wallentiny at [wallentiny.p@husky.neu.edu](mailto:wallentiny.p@husky.neu.edu), the person mainly responsible for the research. You can also contact Dr. Chris Unger, the Principal Investigator at [c.unger@northeastern.edu](mailto:c.unger@northeastern.edu)

**If you have any questions regarding your rights as a research participant**, please contact Nan C. Regina, Director, Human Subject Research Protection, 490 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: [n.regina@neu.edu](mailto:n.regina@neu.edu). You may call anonymously if you wish.

**This study has been reviewed and approved by the Northeastern University Institutional Review Board (# CPS17-02-17)**

**By clicking on the survey link below you are indicating that you consent to participate in this study. Please print out a copy of this consent form for your records.**

<https://www.surveymonkey.com/r/PWallentiny>

Thank you for your  
time. Pamela  
Wallentiny

## Appendix D

### Follow-Up Invitation to Participate in Online Survey

Follow Up Invitation to Participate in Online Survey (Second and Third Invitation)

To: English 102 Community College Students

From: Pamela L. Wallentiny

Subject: Request to  
Participate in Online

Survey

Dear Students,

I am contacting you again to invite you to participate in a web-based online survey as part of my research project at Northeastern University. If you have already completed the survey, thank you.

If not, I am asking you to participate in this study because I am interested in finding out about stress and beliefs of meditation among community college students enrolled in English 102 courses. This survey should take between 5 – 9 minutes to complete

Participation in the survey is completely voluntary. Your standing as a Montgomery College student will not be affected by your participation decision. All responses are anonymous, and you are not required to identify yourself in the survey. All responses will be kept confidential and reported in aggregate with no personally identifiable information

By clicking on the link to the survey, you indicate that you understand this information and provide your consent.

<https://www.surveymonkey.com/r/PWallentiny>

Thank you for considering my request. Your participation is important to this study's success. If you have any questions you may contact me through my Northeastern University student email address at [wallentiny.p@husky.neu.edu](mailto:wallentiny.p@husky.neu.edu)

Warm Regards,

Pam Wallentiny

## Appendix F

### Survey Instrument

1. What words come to mind when you think of meditation?

2. Meditation is defined as sitting comfortably with your eyes closed and repeating a sound without meaning, or focusing attention on purpose in the present moment. Please indicate your beliefs about meditation.

	Strongly Disagree	Disagree	Unsure/ Don't know	Agree	Strongly Agree
It can help increase academic performance and achievement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can reduce anger and aggressive behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can lower blood pressure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It takes a lot of time to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can reduce depression.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can make you more alert and focused.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is based on a person's religion and religious belief.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It increases stress levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It improves relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is a waste of time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can enhance sleep and reduce insomnia.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It must be done daily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can reduce test anxiety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It can increase self confidence and personal control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Unsure/ Don't know	Agree	Strongly Agree
It is done by people out of the mainstream and considered a bit different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It requires a lot of training to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It must be done in a private, quiet place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is difficult to learn how to meditate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. What are the top 3 things you are stressed about right now?

4. In the LAST MONTH, how often have you...

	Never	Almost Never	Sometimes	Fairly Often	Very Often
Been upset because of something that happened unexpectedly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you were unable to control the important things in your life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt nervous and "stressed"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dealt successfully with day to day problems and annoyances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you were effectively coping with important changes that were occurring in your life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt confident about your ability to handle your personal problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that things were going your way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Found that you could not cope with all things that you had to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been able to control irritations in your life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you were on top of things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been angered because of things that happened that were outside of your control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Found yourself thinking about things that you have to accomplish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been able to control the way you spend your time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt difficulties were piling up so high that you could not overcome them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. What is your gender?

- Male
- Female

6. What is your age category?

- 18 - 23
- 24 - 34
- 35 - 50
- 51 - 62
- Over 62

7. What aspects of meditation **appeal** to you?

8. What aspects of meditation **do not appeal** to you?



9. Would you consider practicing meditation if training were provided?

- No, I am not at all interested.
- Possibly. I would need to learn more about it.
- Definitely. I am very interested.
- I already practice meditation.

10. How does meditation help you?

Other (please specify)