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The Use of Self-Service Technologies in Stress Management: A Pilot Project

Carissa Morris
St. Catherine University

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The Use of Self-Service Technologies in Stress Management: A Pilot Project

Submitted by Carissa Morris
May 2012

MSW Clinical Research Paper

The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present their findings. This project is not a dissertation.

School of Social Work
St. Catherine University & University of St. Thomas
St. Paul, Minnesota

Committee Members:
Philip AuClaire, PhD, Committee Chair
Janet Dahlem, MA, Associate Professor in MA Holistic Health Studies
April Brandt, MS

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Abstract

This research describes a pilot program created to help St. Catherine University's Associate nursing students receive education regarding stress management and practice relaxation techniques. The program was developed using three key elements: 1) practicing a variety of relaxation and mindfulness techniques 2) practicing these techniques through the use of self-service technologies, and 3) participating in group sessions where psychoeducation regarding stress, depression and anxiety was provided.

Six participants completed the stress management program. They practiced breathwork, mindfulness and guided imagery exercises through podcasts and apps on internet-capable, mobile devices. Results showed decreases in stress and anxiety levels among participants. Additional studies, and replications of this type of program using integrative practices, in a group setting and utilizing self-service technologies as a means to reduce stress is encouraged.

Keywords: Stress, Depression, Anxiety, Podcasts, Apps, Self-Service Technologies

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Introduction

Over the past four decades, institutions of higher education have been working with students to address and mitigate the effects of stress while in college. Certain areas of study notoriously known for academic pressure and competitiveness are those professions within the medical field. Healthcare professions have a reputation for having high academic expectations, as well as requiring healthcare professions to provide patient-centered care when interacting with their patients. The combination of being able to execute critical thinking skills while maintaining the dignity and respect of their patients creates a challenging educational experience for those just beginning in the profession. On a macro level, MacLaughlin (2001) notes that the impending healthcare personnel shortage, due to the aging baby boom generation is only likely to increase stress within the medical profession. The increasing demand for qualified health professionals places the need for higher education institutions to help meet the demand. Tipton (2008) reports that entry-level nursing programs across the country are challenged in preparing students to pass the nursing licensure exam that expects graduates to demonstrate no less than 1,185 competencies in all areas of healthcare. Therefore, when students are not successful it impacts the student, the nursing program and the healthcare community. In order to address this need, several colleges and universities have developed stress management programs to support students pursuing education in healthcare.

One way in which colleges are supporting their students is through the promotion of personal well-being. Educating students on how to practice good self-care is equally important in retaining highly trained professionals and providing good patient care

(MacLaughlin, 2001). In particular, student nurses are an appropriate group to target because they are a readily available population with significant stress-related problems and are often faced with deficiencies in how to manage work/life related stress (Jones, 2000). Institutions of higher education have created programs aimed at helping students managing stress in order to support academic excellence, as well as to foster coping skills in a profession known for risk of “burn out.”

One of the paradoxes that exist with this population is motivating the student to take time to practice stress management techniques. Cost college students are short on time and the idea of integrating a new self-care habit must be affordable and easily accessible. Technology has the potential to help meet the needs of students in a variety of ways. Today’s modern college student is well-acquainted and equipped with technological devices, Computers, online learning environments, and mobile phones allow access to a variety of technological capabilities. These technologies, such as podcasts, email, computer-aided presentations, etc., are intended to enrich the student’s learning environment. It is also important to exploring how today’s technological devices and programs can also help students in managing their stress, as well.

Application software and podcasts are designed to help users to perform specific tasks. Application software is commonly known as “apps”. An app is a piece of software that can be downloaded and installed on internet-capable devices. These apps can run on the Internet, Mp3 players, computers, phones and other electronic devices. Apps can be used to perform a variety of services and functions. Another popular technology is podcasts. Podcasts are video and audio broadcasts that have been converted to MP3 or other audio file format for playback in a digital music player.

Podcasts may be offered as downloads from a website, or they may be made available via a syndication format.

Podcasts and apps can assist people in managing their stress. People can access a variety of stress relieving and mindfulness practices through personal computers, such as iPads and Internet capable smartphones, at any location. Although students have been using these types of technologies in their daily lives, they are now beginning to be used in academic settings as learning tools. The popularity of mobile devices is rising at a rapid pace and research on the efficacy of using these devices for learning is just beginning.

The questions examined in this study is: can participation in stress management classes coupled with the utilization of self-service technologies, such as podcasts and downloadable ‘apps’ utilizing guided imagery, breathwork and mindfulness, help associate nursing students reduce their stress, depression, and anxiety levels?

Literature Review

Nature of Stress

“Stress was originally defined by Selye (1976) as the non-specific response of the body to any demand. In current usage, the term typically refers to both physiological and psychological responses to increased demands on the organism” (Giuseffi, 2011, p. e269). Stress is a normal part of the human experience. Stress can be both positive and negative. Exposure to stress can be beneficial. For example, it can increase human performance. The stress response is a fundamental human experience whose primary goal is to ensure safety and protection. However, when we are exposed to stress for an

extended duration of time and/or if there are too many stressors occurring concurrently, it can produce physiological dysfunction.

Seward (2012) acknowledges that there are three types of stress: eustress, neutress and distress. Eustress is the type that is experienced by people as motivating or inspiring, such as the stress that accompanies getting married. Neustress is considered neither good nor bad. Distress is the most common and identifiable type that is considered bad. People experience stress as either being acute, which is generally abbreviated, or chronic which continues over a prolonged period of time.

The Stress Response

When a stress event occurs, our bodies have a physiological response. The stress reaction perceives the stressor as negative and a danger to our well-being. When this happens, the sympathetic nervous system is activated. Our bodies respond with increased heart rate, sweating, blood vessel constriction, and muscle tension, as this is our body's way to prepare itself to begin to cope with the stressor.

These physical signs initiate what is known as the "fight or flight response". Also, often referred to as the "fight, flight or freeze response". When humans experience an overwhelming threat to their well-being, they are motivated to either fight or run away. "In 1914 Harvard physiologist Walter Cannon first coined the term fight or flight response to describe the dynamics involved in the body's physiological arousal to survive a threat" (Seward, 2012, p. 6). This response is known as our stress response. The fight aspect can involve a physical argument, verbal assaults, and increasingly more common, the use of technologies such as email and text messaging. Whereas, the flight response includes physically escaping the stress, as well as through escapism such as

surfing the web, playing video games and the use of drugs or alcohol. Freezing is often seen in cases involving young children. For example children, when exposed to an acute stressor, will freeze as a means of coping with the stressor. It's important to understand our bodies stress response in order to help recognize the effects of stress on humans.

In a healthy stress response, once the stressor is no longer a threat, the body begins to recover and regain homeostasis. An unhealthy stress response occurs when the individual is unable to recover from the stressor or when the stressor is ongoing and prolonged. As a result, the body and mind is uncomfortable with the thoughts and sensations it's experiencing and quickly works to internalize and/or inhibit the stress reaction. Individuals can develop maladaptive coping behaviors in order to avoid their uncomfortable thoughts and feelings. However over time, this often leads to dysregulation in the body, which can manifest itself in problems like depression and anxiety disorders.

Experiencing stress is inevitable. However, people's ability to manage stress varies. Some individuals are more susceptible to the effects of stress, whereas others may be more resilient. Those who are sensitive to the effects of stress can practice ways of building their resiliency. A common practice includes developing mindfulness to a means of coping with a stressful event. Mindfulness is an essential practice in caring for self.

Stressors are often thought of as being external. However, Vogel & Bower (1991) explain that stress can also manifest from within the mind of the individual. "We create our own stress, make our own stressful events, and cause our own diseases. These

processes are based on specific genetic vulnerabilities, individual experiences, and environmental circumstances” (Plotnikoff, 1999, p. 169). Therefore, not only are we responding to stressors as part of everyday life, but we also are responsible for manifesting stress based on how we perceive and interpret our experiences. The degree to which an individual is susceptible to the effects of stress and how it manifests in a person’s life is variable by the nature and extent in which it is experienced (Plotnikoff, 1999).

Experiencing stressors is unavoidable and it often occurs unexpectedly. However, stressors are also anticipated, particularly when we are on the cusp of major life transitions. Attending college is one of those times. For traditional age students it is the first time they are living independently of their parents, and it is a large financial investment into their future for students who are the first in their family to attend college. The pressure to succeed is great. The latter often lacks the support upon entering college on how to navigate higher education. In addition, today’s college students are often balancing the additional responsibilities of work and family responsibilities.

Impact of Stress

Exposure to stress can have detrimental effects on one’s health. Stress is a major contributor to leading causes of death, such as heart disease and stroke. Selye (1976) states stress is a high-prevalence universal problem. On a global level there is a high-prevalence of stress. “A 2006 international poll showed that nearly 75% of residents of developed countries reported feeling stressed on a daily basis (Associated Press-Ipsos,

2006)” (Giuseffi, 2011, p. e269). Of those surveyed, 53% felt concerned about their current level of stress (Giuseffi, 2011).

Gender Differences in Managing Stress

Research indicates that there may be some fundamental differences about how women and men experience and cope with stress. A theory supporting the differences between how women compared with men deal with stressors is termed ‘tend and befriend’. In 2000, Shelly Taylor developed the theory which asserts that women are more likely to rely on their friends and social networks during unpleasant events and circumstances, whereas, men are more likely to engage the flight or fight response (Seward, 2012). Recognizing the need for adequate social support for women to help in managing stress is an important aspect to consider in approaching stress management.

“Social support has been found to mitigate the impact of stress (Cohen & Wills, 1985). However, women attending college reported being dissatisfied with their available social support. Even though most women (70%) had a close confidante, women of all ages reported being uncomfortable asking for help. Feeling uncomfortable imposing on others was also universal” (Giuseffi, 2011, p. e279). Giuseffi (2011) also found that non-traditional aged women in college are more likely to experience feelings of isolation due to the fact that many women are balancing family and/or work demands. Although a growing minority among the college population, their needs are unlike the traditional aged (18-24 year old) college students of their peers.

According to Giuseffi (2011), research has shown that women: 1) report higher levels of daily and chronic stress; 2) are more likely to report home and family life events and caregiving roles as stressful; 3) have reported higher rates of negative

emotional reactions (e.g. irritability, sadness) and physical symptoms (e.g. headache, gastrointestinal complaints) in response to stress, and as a result; 4) women were shown to be more likely to use prescription medications, and over/under eat in attempting to cope with stress (Giuseffi, 2011). Female students feel overwhelmed and pressured for time. Self-doubts and the perceived need of students to focus virtually exclusively on classes may conflict with attempts to meet family demands, compounding stress. Therefore, it is critically important to help women integrate stress management techniques that encourage self-care to not only help manage the multiple and often conflicting roles and responsibilities, but to also help foster emotional, physical and mental well-being.

In a 2009 College Counseling Center Directors Annual Survey, asserts “this shift is especially alarming for female students, as women in general suffer disproportionately from depression and anxiety (Arehart-Trieichel, 2002) and most campus counseling clientele are female (Beattie, 2010). Additionally, women are often more likely to be balancing family needs and responsibilities, as well as managing their personal welfare. Stress, anxiety and depression have very similar symptoms, making it difficult to discern their differences. Stress and anxiety are linked to feeling hopeless, while depression is linked to an inability to function and, in extreme cases, suicide (Barr, Rando, Krylowicz, & Winfield, 2010). Useful intervention strategies are needed in order to address anxiety and stress because it is essential to the success of female university students (Margolin, 2011).

Stress among College Students

Stress among college students is commonly known. College students find

themselves in a new environment with new responsibilities. It's a major life milestone and transition in one's life. College students take on new financial responsibilities and academic pressures. They are exposed to new people, concepts and temptations. The growing diversity among the student population brings students with unique needs. Generally speaking, they are required to make decisions on a higher level than what they are used to. "In a 2009 College Counseling Center Directors Annual Survey, 94% of Directors reported an increase in the number of students with significant psychological problems (Barr, Rando, Krylowicz, & Winfield, 2010). According to one Canadian counseling center, over the past decade, students' concerns have shifted from normal developmental issues, (75% in 2001; 35% in 2008) to more serious and severe mental health difficulties (25% in 2001; 35% in 2008; Beattie, 2010)" (Margolin, 2011, pp. 234-235). Healthy stress management is critical for students to be able to perform well academically.

Mental Health Needs at Saint Catherine University

A 2008 survey of St. Catherine University students conducted by the University of Minnesota Boynton Health Services found that approximately 25% of students report that they are unable to manage their stress level, and 40% of students report having adequate sleep only three or fewer days in the previous seven (Boynton, 2010). Without the ability to receive adequate sleep and manage stress, academic performance is negatively affected.

Peterson (2011) reported in a survey of St. Catherine University, that associate-degree students reported anxiety and depression as the two most frequently reported mental health diagnoses for both within their lifetime and experienced within the past 12

months. Among the associate student population, 43.3% report being diagnosed with mental illness in their lifetime, 24.8% of two-year students report that they are unable to manage their stress level, 16.8% of two-year students with unmanaged stress report being diagnosed with anxiety within the past year, and 12.9% of two-year students report taking medication for depression. The reported experiences of St. Catherine University students, of which 90% are women, are in alignment with national trends indicating a prevalence of mental health issues, particularly, anxiety and depression.

National Affairs Administrators in Higher Education (NASPA) reports an 80% increase in elective serotonin re-uptake inhibitors (SSRIs) use in the last five years. SSRI's are a class of compounds typically used as antidepressants in the treatment of depression, anxiety disorders, and some personality disorders. Ten years ago 16% of counseling center students had a major mental health diagnosis, and today that has increased to 44%. NASPA predicts that mental health needs amongst college students will continue to increase for the next ten to twelve years (Peterson, 2011).

Stress experienced during college years can be detrimental to one's health and well-being. MacLaughlin (2001), reports the stress among medical professionals begins prior to the commencement of their professional careers. Medical professionals report having begun experiencing high levels of academic stress during their academic and clinical trainings while in college. "Medical education has deleterious consequences. Trainees (students, interns, and residents) suffer high levels of stress, Medical students have mean anxiety scores one standard deviation above those of non-patients, and their depression levels increase significantly throughout the first year of medical school" (Shapiro S. S., 2000, p. 748). In the length of time it takes for college students to earn

their degree, students experience both chronic and acute stress. Brennan (2010) addresses this as the inherent challenge of adjusting to college life. There is pressure related to both academic and performance expectations.

Research related to college students in medical and nursing programs has shown stressors unique to their profession. Students pursuing degrees in the medical field must meet rigorous standards and competencies in order to be certified or licensed to practice. Generally speaking, the medical profession is known for its hierarchy of educational levels, as well as expertise within specified areas related to illness, health and recovery. “A review by Dyrbe et al. highlighted the many stressors unique to medical school, which range from the high volume workload to ethical conflicts, and exposure to human suffering and death” (MacLaughlin, 2001, p. 1).

Brennan (2010) reports that women in the medical field may experience additional stress due to the fact that it is a traditionally male-dominated field. Additionally, medical students report feelings of powerlessness contribute to their overall stress. “Although there is an individual optimal stress level that can enhance one’s performance, too much stress or test anxiety can also hinder an individual’s performance. Studies have revealed that being a student, not just a medical student, is stressful and that students’ main concerns are academic performance and/or test anxiety” (Paul, 2007, p. 287). There are several ways in which stress can compromise the health and well being of students in college. In addition to impacting academic performance, De Kooker (2008) identified that exam-related distress also impacts immunity, decreased attention and concentration, poor decision-making ability, alcohol and drug abuse, depression and anxiety, relationship difficulties, and suicide (Shapiro S. S.,

2000).

There are several short-term symptoms of stress. Shapiro (2000) and MacLaughlin (2001) discuss the negative effects that include decreased attention and concentration, difficulty with decision-making, and challenges with interpersonal relationships. Typical behaviors include increased cynicism, academic dishonesty, substance abuse, depression and anxiety, and even suicide.

Long-term consequences of stress can lead to physiological dysfunction resulting in increasing symptoms of anxiety and/or depression. Overtime, these symptoms can lead to burnout. Brennan (2010) reported,

Anxiety, depression, and a general sense of “burnout” may all result from the increased stress experienced by medical students. Dyrbye and colleagues report that about 50% of medical students have experienced ‘burnout’ and about 10% have experienced suicidal ideation at some point during medical school. Although many students are habitual exercisers in college, many decrease or eliminate ‘self care activities’ such as exercise and monitoring their diet and general health in response to the time demands of medical school. Increased use of alcohol and drugs may also occur. (Brennan, 2010, p. 15)

Mental health support and stress management programs are important aspects of supporting the social and emotional needs of students in college, particularly when these students enter a profession known for having high levels of stress and potential for professional burnout.

How Stress Relates to Depression and Anxiety

According to Grobeman (2001) stress is a result of particular situations that arise during a person’s life as they deal with certain daily pressures. These pressures elicit a stress response within the body and cause adrenaline to be released. This creates a cascade of bio-chemical changes that can lead to depression, raised blood pressure and

other negative health side effects if it occurs for too long. Stress can also cause anxiety, and depression. This is often why depression and anxiety are closely linked. Anxiety is the process during which a person becomes scared and apprehensive of what may lay ahead. Anxiety symptoms often manifest in physical problems like physical pains, dizziness, and panic attacks.

While the triggering of a stress-inducing factor known as a stressor causes stress, anxiety is what happens when someone gets stressed out and has no reasonable root stressor that can simply be removed. This is precisely why while anxiety is considered a legitimate mental disorder, stress is not. (Grobeman, 2001)

Anxiety symptoms that extend beyond 6 months are the period of time that qualifies it as a clinical diagnosis.

College Students and Test Anxiety

Test anxiety is a common experience among college students, particularly in programs that are competency based and are intrinsically competitive. According to Paul (2009) test anxiety is a type of distress, which has a physiological component. “Research studies have found that elevations in corticosteroid levels (hormones released during times of distress) can impair declarative memory, concentration, and learning. Thus, high levels of stress can make it more difficult for students to concentrate and comprehend information” (Paul, 2007, p. 287). The body’s fight or flight’s response can inhibit their ability to access complex information and critical thinking skills. “The worry or emotional arousal that can accompany test anxiety causes the student to become centered on the “self” during an exam rather than the task, thus possibly negatively influencing future academic performance if no coping techniques are adopted” (Paul, 2007, p. 287).

Western Approach to the Treatment of Stress and Anxiety

General practitioner and family practice doctors see the majority of people currently being diagnosed and treated for anxiety and depression. “These doctors, including internists, pediatricians and obstetrician/gynecologists, prescribe more than 60 percent of anti-depressants and anti-anxiety drugs” (Solomon, 2011). As a result, doctors need to seek continuing education on diagnostic assessment of mental health issues. Seven percent of all visits to primary care doctors result in prescriptions for anti-depressants. This is up from three percent in 1997, according to a study published recently in Health Affairs. Of the mental health diagnoses by family physicians, only vague complaints of "fatigue, pain and malaise," are noted, and often without a formal clinical diagnosis (Solomon, 2011).

When mental health professionals for clinical assessment see patients, patients participate in a psychosocial assessment as part of their diagnostic assessment. In order for a mental health practitioner to be able to make a diagnosis of anxiety the patient must fit the following criteria as defined by the American Psychiatric Association. The patient must demonstrate excessive anxiety and worry, occurring more days than not for at least six months, about a number of events or activities. The person finds it difficult to control the worry. The anxiety and worry are associated with three (or more) of the following six symptoms: 1) restlessness or feeling keyed up or on edge; 2) being easily fatigued; 3) difficulty concentrating or mind going blank; 4) irritability; 5) muscle tension; 6) sleep disturbance and; 7) The symptoms cause impairment in social, occupational, or other important areas of functioning. Whereas, for a diagnosis of depression a patient must report at least five of the following symptoms, 1) depressed

mood, most of the day; 2) diminished interest/pleasure; 3) weight gain or loss; 4) insomnia; 5) fatigue; 6) feeling worthless and; 7) difficulty concentrating, as defined by the American Psychiatric Association (2000) in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

In a clinical counseling session, De Kooker (2008) reports that a therapist helps patients manage their stressors by helping them recognize and deal with psychosocial factors that may interact negatively with existing conditions. Goals include broadening the individual's scope of attention, cognition and action, and the building of physical, intellectual and social resources that facilitate self-efficacy, optimism, resilience and health. By understanding oneself in an environment in a complex, and multi-faceted way, the individual develops a wide range of personal coping skills in managing stress, and therefore reduces their vulnerability to anxiety, depression and immune dysfunction.

When patients are seen by a mental health professional for anxiety, in addition to the prescription of medications, the following counseling treatment components are included in a treatment plan which may involve psychoeducation, relaxation training, gradual exposure, cognitive restructuring, study skills training, and relapse prevention. Clinician-administered treatments tend to be effective in both individual and group modalities (Pless, 2010). In addition to traditional approaches to addressing anxiety and depression, the integration of holistic approaches have gained in popularity and efficacy in treatment outcomes.

Integrative Psychotherapy

Integrative psychotherapy refers to the bringing together of the affective, cognitive, behavioral, and physiological systems within a person, with an awareness of

the social and transpersonal aspects of the systems surrounding the person. In the context of anxiety and depression, it's important to address the spiritual practices and beliefs, nutrition, sleep hygiene and social support.

German (2003) illustrates a case study of an integrative approach with a college student named Mark. He began integrative therapy with a psychologist for treatment of his symptoms of anxiety and depression, as well as suicidal ideation. Mark reported high levels of stress and perfectionist tendencies. In conjunction with conventional clinical treatment goals, the therapist used relaxation techniques including progressive muscle relaxation and deep breathing techniques in session. Additionally, the therapist utilized other mental strategies such as self-hypnosis, mindfulness, and meditation to assist in managing stress. Results of the case study resulted in a reduction of both anxiety and particularly depression to where it would be considered in the "normal" range. At termination, the client was able to administer self-hypnosis as a way of increasing self-awareness through a mindfulness practice.

Benefits of Stress Management

As mentioned earlier, practicing stress management techniques can help prevent professional burnout. Research has also shown that participants who practice stress management reap many personal benefits. Shapiro (2000) performed a meta-analysis study of stress management programs in medical schools and reported medical trainees participating in stress-management programs demonstrated: (1) improved immunologic functioning; (2) decreases in depression and anxiety; (3) increased spirituality and empathy; (4) enhanced knowledge of alternative therapies for future referrals; (5) improved knowledge of the effects of stress; (6) greater use of positive coping skills; and

(7) the ability to resolve role conflicts. Four of the 24 stress management programs reviewed found no difference between experimental and control groups on standardized measures of psychological functioning, immune functioning, or health at post-assessment. However, participants did report that they felt positively regarding their participation in the stress management programs (Shapiro S. S., 2000).

Use of Mind-Body Techniques in Managing Stress

In stress management programs, the use of several types of mind and body techniques is practiced to initiate the relaxation response. Using mind-body techniques acknowledges that our thoughts impact our body, as our body impacts our mind. MacLaughlin (2001) states our well-being is enhanced by the promotion of self-awareness and self-care through using integrative techniques. “Mind body medicine takes into account the connectedness between the mind and body, and its effect on overall health. It embraces several well-defined strategies such as relaxation, meditation, yoga, biofeedback, imagery, autogenic training, tai chi, qigong, hypnosis and spirituality” (MacLaughlin, 2001, p.2).

Regular practice of relaxation techniques reinforces what is learned during the session and facilitates generalization of the relaxation response. In this way individuals learn to heighten body awareness and reduce physiological arousal leading to more automatic relaxation (Andrasik, 1990). Thus, individuals are able to develop valuable self-regulation skills that help to relax the central nervous system, decrease sympathetic arousal, and help retrain the autonomic nervous system – producing homeostasis and supporting general health and well-being.

College Student Satisfaction in Participating in Stress Management Programs

It is expected that participants will learn new coping skills and techniques to assist with managing stress. For example, in Beauchemin's (2008) research adolescents diagnosed with learning disabilities participated in a 5-week mindfulness meditation program. After the 5-week pilot, outcomes demonstrated a reduction in feelings of anxiety by the participants. Additionally, students expressed positive attitudes regarding the experience. One hundred percent of participants reported positive feelings about the meditation and expressed that the mediation led to feelings of calm, quiet, relaxation, peacefulness, or better overall feelings. Also, students demonstrated improved social skills and improved academic performance.

Brennen (2010) reported that students were most satisfied in sessions when they could practice small behavior changes that did not take much time out of their daily schedule. For example, deep breathing, identifying and then reducing tension in their body, changing the foods that they eat and staying mindful were found to be easily integrated into one's life without much hassle. Whereas, sessions that required students to do more complex tasks and may have required more time and energy, such as guided imagery, balancing, coping, and changing their thinking, seemed more difficult for them to integrate into their lives.

Another benefit of the program was that students became more aware of their stress level and therefore more able to proactively address it. A few participants asked about referrals for mental health treatment, who most likely would not have done so without this program. Thus, such a program is an effective way to help students improve their self-assessment of their own mental state (Brennan, 2010). Stress management

techniques frequently cited in the literature include autogenics, breathwork, meditation and guided imagery. It will be important to further explore each of the modality's application and potential benefits.

Autogenics and Use with College Students

Autogenic training is a mind-body technique that is a self-relaxation procedure based on passive concentration on functioning of the body. For example, imagining heaviness and warmth of arms, legs and abdomen or concentrating on the rhythm of breathing and heartbeat. Autogenic training is particularly helpful when practiced by individuals at the end of the day to help induce sleep. Jorm (2001) performed a meta-analysis of clinical outcome studies that assessed the effectiveness of this treatment in reducing anxiety. According to Jorm:

Three studies found that, compared with control groups, autogenic training significantly reduced anxiety for individuals with a diagnosed anxiety disorder, and those who described themselves as being anxious or having high levels of stress. One study found that student nurses given autogenic training for 6 weeks to reduce their risk of stress took significantly fewer days off compared with a control group. Two other studies found that autogenic training alone or autogenic training with other treatments have so significant effect on individuals' levels of test anxiety. The remaining study found that study participants who experienced 'tension' reported that their levels of tension reduced by similar amounts after receiving no treatment, after receiving autogenic training only, or after receiving autogenic training and other treatments. (Jorm, 2004, p. S35)

Although the remaining study did not show improvement in regards to the reduction of tension, it did not produce any harm to the participants. Research has shown that autogenic training can also help with overcoming addictions, change unwanted behaviors, resolve anxieties, and mitigate symptoms of physical ailments.

Breathwork and Use by College Students

Breathwork is a specific body-mind therapy that utilizes consciousness and breathing in an intentional way. Breathwork utilizes the diaphragm when drawing in deep, slow breaths. The breaths can be connected to where there is no pause between the inhalation and exhalation. This is sometimes called circular breathing. Breathwork is a therapeutic tool that has the capacity to affect not only the physical aspects of our bodies but also the emotional, mental and spiritual aspects as well.

Paul (2007) conducted a study with 64 college students, utilizing breathwork. As a result, students reported decreased perceptions of test anxiety, nervousness, self-doubt, and concentration loss. They used the technique outside of two classes, and believed it helped them academically, and that it would help them in the future in their professional role. The initial benefits of using breathwork allow the body to get into a state of relaxation and release feelings of stress. As our bodies and our breath become deeper, we learn to physically relax the exhale. Once this becomes well practiced, we find that this type of breathing has the capacity to release deeper emotional and mental patterns as well.

Diaphragmatic breathing is also often used as part of meditation practices. Paul's (2007) research showed students who meditated or used diaphragmatic breathing resulted in significant increases in students' academic learning and achievement.

According to Paul:

Diaphragmatic breathing is known to counteract the fight or flight response symptoms that are often associated with anxiety. When a student perceives the exam to be a challenge or has low self-confidence from previous testing experiences, he or she may experience the physiological

symptoms previously discussed in addition to the symptoms associated with the fight or flight response that include increased heartbeat, respiration, blood pressure, muscle tension, and gastric discomfort. Meditation can also be used to counteract stressful situations, as it is a technique to develop concentration and awareness to produce a calming effect; diaphragmatic breathing is central to any meditation practice. (Paul, 2007, p. 288).

Meditation and Use with College Students

Meditation practice encompasses a variety of elements that can vary by persons practicing meditation. Meditation can be practiced, sitting up, lying down or in an inverted position. Some people who meditate may use chanting, and breathwork as part of their practice. Some meditations, such as loving kindness meditation, can be used to express and nurture gratitude within and between oneself and others. Tang (2007) cites meditative techniques that are easier for novices to begin are: concentration meditation, mantra, and mindfulness meditation, which rely on mind control or thought work which can include focusing on an object and/or paying attention to the present moment. It is easier to begin with concentrating on something instead of trying to be void of thought. Tang (2007) also states that using compact discs for practice instruction occupies the novice's wandering mind through continuous sensory input, maintaining and facilitating the mindful state. Many meditation-training methods use audiotapes or compact discs to help beginners.

Mental training methods also share several key components, such as body relaxation, breathing practice, mental imagery, and mindfulness, which can facilitate a meditative state. Research by Shapiro (2008) and Tang (2007) shows that integrative mind-body training improves emotional and cognitive performance and social behavior. Tang's (2007) research goes on to say that meditative practices have been shown to be effective after only a few days of practice and the combination of breathing, mental

imagery and mindfulness work together to amplify the training effect versus the use of only one of these components.

Integrating a mindfulness practice while in college can improve both cognitive and academic performance. Shapiro (2008) conducted a meta-analysis of stress management programs and concluded that meditation has a positive impact on academic performance, psychological well-being, and interpersonal experience for students in college, medical school, and other higher education settings. “Mindfulness meditation may improve ability to maintain preparedness and orient attention. Mindfulness meditation may improve ability to process information quickly and accurately” (Shapiro S. W., 2008, p. 4). Shapiro (2008) cites that concentration-based meditation, practiced over a sustained period of time, may show a positive impact on academic achievement and decrease stress, anxiety and depression levels.

Meditation helps to develop the whole person. Shapiro (2008) states that meditation supports the development of creativity. It supports and enhances the development of skills needed for interpersonal relationships, as well as, cultivating compassion of self and others.

Visualization/Guided Imagery and Use with College Students

Guided imagery is a program of directed thoughts and suggestions that guide your imagination toward a relaxed, focused state. “Mediation and visualization are ancient helping strategies well established in Hinduism, Judeo-Christianity, and traditional Chinese and Aboriginal medicine. These alternative interventions are resurfacing in contemporary North America and show promise for increased self-awareness, concentration, improved mood and sleep, reduced fear and anxiety, and pain reduction”

(Margolin, 2011, p. 235). Practicing visualization is popular approach to helping initiate the relaxation response in the body by using the mind to affect the body and vice versa.

“Visualization is the practice of conscious control of mental imagery. ‘Mental imagery’ refers to the perceptual information that is brought to the mind from memory and imagination, rather than arising from activation of the sense organs” (Margolin, 2011, p. 241). Visualization has been practiced for centuries and is used in many hospitals to help cope with pain, as well as in the promotion of healing. “Guided imagery is the form of visualization most studied and practiced in relation to health and wellness in recent years. Its aim is to employ the mind’s language to communicate with the self and make sense of both inner and outer experiences (Kabat-Zinn, 1990). Margolin (2011) found that most female university students in their study suffered from anxiety concerning exams and feeling overwhelmed with coursework. Many chose to explore the effects of creative visualization on the psychological distress they were experiencing at university. Using creative visualization as a strategy, participants reported a newly found awareness in their ability to curb their performance-anxiety concerning university exams and coursework.

Efficacy of Mind-Body Techniques in Stress Management Research

Tang (2005) found that participants practicing mindfulness and meditation with only 5 days of practice showed significantly better attention and control of stress, compared with the control group. The research study was comprised of 40 undergraduate Chinese students, who were given five days of 20-minutes a day to practice mind-body training techniques. The results showed greater improvement in conflict scores on the Attention Network Test, lower anxiety, depression, anger, and

fatigue, and higher vigor on the Profile of Mood States scale. Physiologically, they showed a significant decrease in stress-related cortisol, and an increase in immunoreactivity (Tang, 2007, p. 17152).

Dr. Jon Kabat-Zinn, a well-known medical doctor is known for developing a Mindfulness-Based Stress Reduction (MBSR) program that has been shown to combat stress, psychologic distress, and job burnout that health care professionals frequently experience. Other studies show similar stress-reducing effects of mindfulness meditation in primary care physicians and in nursing students (Horowitz, 2010).

Use of Technology in Stress Management

Technology has become integrated into every aspect of modern society. The use of media to teach stress management techniques has been on the rise. For example, mobile web applications, known as “apps”, harness the power of the Internet with the simplicity of multi-touch technology on a small screen and have seen exponential growth in the last few years (Pulman, 2010). iPhone and iPod touch customers have now downloaded billions of apps (Apple, 2009) and can choose from a range of 20 different categories including health. Pulman (2010), reported health-related apps that offer tremendous potential for users and could be specifically designed for particular conditions and purposes. For example, Mayo Clinic Meditation (Apple App Store, 2010) is a clinically validated method of meditation developed by the Mayo Clinic, which offers a 5 and 15-minute meditation aimed to help users feel more focused and relaxed throughout their day.

Research shows that 18-26 year olds are likely to use the Internet and self-service technologies as a source for health information. Cotton & Gupta (2004) studies

computer usage for health information. Results indicated that individuals who seek health information online tend to be younger and college-educated. They are also more likely to spend time using the Internet for activities other than email. Furthermore, Escoffery's (2005) study of undergraduate college students indicated 74% of respondents indicated having received health information using the Internet. Johnson (2011) reported that by 2015, 80% of people accessing the Internet would be doing so from mobile devices. Users access the Internet through the use of applications for many reasons, and in particular for education.

Video and audio podcasts, as well as online self-help programs have been developed to help people practice stress management techniques. Sethi (2010) conducted research utilizing Computerized Cognitive-Behavioral Therapy (CBT) adults suffering from depression. The internet-delivered self-help program used minimal therapist contact for patients suffering from mild to moderate depression. Participants who received the online self-help intervention improved significantly on measures of depression compared to those in the control group. "The authors concluded that Internet self-help can have positive effects on mild to moderate depression and is more effective in terms of both time and cost than traditional face-to-face CBT" (Sethi, 2010, p. 145). "The results detailed indicate differences in symptoms between participants in the experimental and control conditions. Both computerized cognitive-behavioral therapy (CCBT) and standard face-to-face cognitive-behavioral therapy (CBT) produced significant reductions in symptoms of participants suffering from mild to moderate depression and anxiety when compared with a no-treatment control group" (Sethi, 2010, pp. 155-156). In a similar research study, Marks (2003) reported, "Individuals with anxiety and depression improved significantly and clinically meaningfully, and were

fairly satisfied with computer-aided CBT despite a marginal preference for face-to-face care” (Marks, 2003, p. 62).

Van Vilet (2009) used web-based curriculum with students teaching stress management and coping techniques. Results showed a small but significant increase in their knowledge about stress and coping. Students reported increased use of support-seeking coping behaviors, which was an aspect in every lesson. Psychological distress decreased and life satisfaction increased, consistent with the intervention having a beneficial effect on mood. The web-based curriculum provided mental health education that was financially feasible and demonstrated efficacious results at the level expected from a short-term intervention (Van Vilet, 2009).

Brennan (2010) offers additional considerations when utilizing technology as an intervention. Sending email or text messages as reminders to practice, as well as providing relaxation exercises on the web or in mp3 format for participants to use as a supportive measure is helpful in prompting participants to engage with the technology. Brennan also supports the idea of integrating these sessions into the medical school curriculum as well as including some individual coaching or mentoring to optimize the effectiveness of the program.

In a similar study, Proudfoot and colleagues (2003) examined the efficacy of a commercially available computerized CBT program called Beating the Blues (BtB). For the study, BtB was administered to a patient who reported feeling anxious and depressed and was compared with general practitioner care. Results demonstrated significant improvements across measures of anxiety, depression, and social adjustment, in favor of the computerized CBT program. Treatment gains were maintained at a six-month follow-up” (Sethi, 2010, pp. 145-146). “These findings have been replicated in studies

by Cavanagh and colleagues (2006), larger decreases in symptoms of depression and/or anxiety were observed following computerized CBT” (Sethi, 2010, pp. 145-146).

An Australian-developed Internet intervention for depression (MoodGYM) has shown promise in trials with adults (Christensen, Griffiths, & Korten, 2002; Christensen et al., 2004). MoodGYM provides information about depression and teaches skills to address symptoms based primarily on cognitive-behavioral principles, including cognitive restructuring, pleasant activity scheduling, and interpersonal problem solving. It also provides animated demonstrations, quizzes, and ‘homework’ exercises for users to learn more about proneness to depression and to practice their skills” (Sethi, 2010, pp. 145-146).

Research is being done not only on treatments with technology as the intervention but also as a supplement to augment skills presented during therapy sessions. Sethi (2010) reported that face-to-face sessions followed by a computerized treatment had the largest impact on decreasing symptoms of depression and anxiety. The rationale behind the efficacy of this treatment is the belief that meeting with a therapist in real time motivated individuals to “to do a better job” on MoodGYM and to engage more with the program. Following individual therapy session practicing Cognitive Behavioral Therapy (CBT) with the participant, and having built a rapport with the therapist, participants were able to cement their learning with computerized CBT modules and demonstrations. “Despite these findings, results suggest that receiving treatment solely through MoodGYM is effective in reducing symptoms of anxiety, distress, and automatic negative thoughts in comparison to a control group. This is consistent with previous findings (Christensen et al., 2004) and is especially important for those in remote areas who are unable to access face-to-face therapists due to geographical

barriers. This may also be an important finding for those who either cannot afford therapy or for those who find it difficult to speak ‘one on one’ about their depression or anxiety” (Sethi, 2010, pp. 156-157). Technology-based, confidential solutions like digital health coaching or other self-help technologies may reach women who may not otherwise seek or receive help for stress management (Giuseffi, 2011). In addition, accessibility and affordability is more cost-effective than traditional, in-office therapy sessions. In web-based education, fidelity is assured, scalability is simple and costs are minimal (Van Vilet, 2009).

Sethi (2010) cites some of the inherent challenges of seeking support from mental health practitioners that includes a shortage of skilled therapists, long waiting lists, and affordability. As mentioned earlier, people seeking treatment for symptoms of depression and anxiety are more likely to seek treatment through a doctor of medicine.

Challenges/Limitations in Using Technology

There are some concerns regarding the use of technology in helping treat persons with depression and anxiety. Pinnock et al. (2007) raised concerns about the risk of engendering dependence and impeding an individual’s ability to self-manage (Pulman, 2010). Secondly, individuals who have limited access to computer or are unable to type, face barriers in utilizing the online programming. Therefore, it can make it more complicated than showing up for a face-to-face meeting with a counselor” (Pulman, 2010, p. 117). Accessibility to technology, as well as having clients who are literate and technologically savvy is essential components to this using this approach. Additionally, “many researchers working within the field of computerized self-help interventions highlight the challenges associated with participants dropping out of studies” (Farvolden

et al., 2005; Eysenbach 2005; Christensen et al., 2004). Using technology as the intervention can make it difficult for participants to be motivated to continue the work. In a traditional counseling situation utilizing CBT, the therapist' ability to establish trust and rapport is a key component to retaining the client in the therapy. Sethi (2010) cites the major challenges in using technology in providing self-help programs, therefore the goal is to maximize engagement, as well as strategies to encourage retention.

Anticipated Benefits of the Stress Management Program

Studies have indicated that nurses and nursing-students alike benefit from programs designed to enhance their self-care abilities (Anstead, 2009, p. 50). The primary goal of the stress management sessions is to help participants to lower their stress, depression and anxiety levels, through practicing relaxation and mind-body techniques.

Participants will receive psychoeducation regarding stress, the stress response, anxiety and depression, as well as how the use of mind-body techniques helps initiate the body's relaxation response. Through psychoeducation and self-reflections, participants will increase their understanding of their environmental stressors and triggers, as well as a better understanding of their relationship with stress and ability to cope.

Reason for Research

Stress management programs exist in medical schools because high levels of stress negatively affect student performance. Medical schools rely on maintaining high board passage rates in order to maintain their accreditation. However, the prevalence and impact of stress on students puts those rates at risk. If students are

unable to be successful academically, it impacts the student, the nursing program, and the healthcare community. According to Jones (2000), student nurses are appropriate to target for stress management since they are a readily available population with significant stress-related problems. By supporting a student's personal well-being through providing stress management, it also supports the goals of the institution to foster academic achievement, and to retain highly trained professionals who are better able to provide good patient care.

Persons susceptible to the negative effects of stress make them vulnerable to developing symptoms of depression and anxiety. According to the research previously cited in the 2008 survey of St. Catherine Associate students in healthcare programs, conducted by the University of Minnesota Boynton Health Services, it identifies the need for further support of college students managing stress, depression and anxiety. These needs are forecasted to grow in the years ahead. By addressing one's stress in college, the student is better equipped to handle the stress that will carry over into their professional career.

For over four decades, stress management programs in higher education have been helping medical students. These programs are known to utilize the practices of meditation, guided imagery and breathwork. These practices can be effective in helping people manage stress, depression and anxiety. In today's modern world, the convenience and integration of technology into the academic and personal lives of students has grown significantly. It is important to examine how technology could assist students in managing their stress through its utilization. Self-service technologies are commonly used and it's important to examine ways in which they can support the user's well-being.

Several reputable institutions such as the University of Minnesota's Center for Spirituality and Healing and the Mayo Clinic have developed apps that facilitate meditation and guided imagery for stress management. Research shows that self-help technologies can be as effective as traditional methods for treatment of stress, anxiety and depression making a convincing argument for serving as a catalyst for moving through therapeutic goals more quickly, but also to greater therapeutic depth. This research is intended to use technology as a means by which nursing students can practice relaxation techniques while participating in group stress management sessions and assessing how it affects stress, anxiety and depression levels.

The advancement of technology has dramatically changed how people work and live. The consequences of which, have been both positive and negative. It is important to examine to what extent technology could assist people in managing stress. Shapiro (2000) identified several positive impacts stress management programs have demonstrated. In addition, Sethi (2010), Marks (2009), Brennen (2010) and Giuseffi (2011) cited research demonstrating that self-help technologies can be as effective as traditional methods for treatment of stress, anxiety and depression.

Paul (2007) recommends that medical students be provided with educational interventions, which teach them effective coping strategies as a proactive measure to counteract distress. "Students must be provided with regular opportunities to develop and practice a strategy as it takes time to abandon an ineffective behavior and replace it with a behavior that is empowering. Our findings suggest that significant behavior changes occurred when students were given a continuous opportunity to practice a 5-minute stress reduction technique meant to reduce the physiological and psychological effects that can be associated with academic stress" (Paul, 2007, p. 290).

Using technology as part of a stress management program to practice relaxation techniques, while participating in group sessions providing an opportunity for students to receive psychoeducation regarding stress and mental illness, as well to acknowledge and understand the consequences of stress, and to acquire a variety of techniques to utilize during future stressful situations.

There is an established need for a stress management program for nursing students. Balancing the demands on a college student's time often challenges him/her and is a consistently reported concern. Additionally, Guiseffi (2011) reported women of all ages are uncomfortable asking for help. It's also important to consider the previously cited theory of a women's need to "tend and befriend" while experiencing a stress event. Taking this theory into consideration, including a group work component in the development of the stress management program is key, particularly because the anticipated majority of participants will be female. Additionally, previously stated findings suggest that technology-based solutions may reach women who may not otherwise seek or receive help for stress management.

The purpose of the research is to see if the combination of group support, self-service technology utilization in practicing mind-body practices can help decrease stress, depression, and anxiety levels among program participants?

Conceptual Framework

Behavioral theory states that people adapt to their environment through conditioning (Urdang, 2008). Behavioral techniques are still widely used in therapeutic settings to help clients learn new skills, reframe thoughts and change behaviors.

Through this research, the practice of mind-body techniques, as well as the

psychoeducation in the group sessions will provide an opportunity for participants to modify their thoughts and behaviors.

This research helps participants increase self-awareness by practicing mindfulness and relaxation techniques. When people experience an increase in self-awareness, they are more likely to change behaviors that do not align with their personal values. People who experience mindfulness become aware of their automatic thoughts and subsequent behaviors. Individuals develop through cognitive functioning and learn through acting in their environment. Behaviors are shaped through the experience of practice and exposure. Knowledge is constructed through experience. Participants' thoughts can impact their state of relaxation and impact behavior. It is also true that our psychoemotional state of being impacts our thoughts and cognitive abilities.

Participants will be intentional about experiencing and dedicating time and energy to practicing mindfulness and relaxation techniques. Participants will increase their awareness of the feedback loops in their interactions with their environment. They will also become aware of the "trigger points" when they feel the need to react to their environment.

The group sessions provide an opportunity for participants to benefit not only on a personal level, but also as part of an academic community. Being part of a group has additional benefit to seeking help individually. Konopka (1963) defines group work as a method of social work that helps individuals to enhance their social functioning through purposeful group experiences. Group sessions help participants cope more effectively with personal, group and community problems (Harte, 1999-2001). Setting up a series of stress management group sessions for the Associate nursing students should not only

help them decrease their feelings of stress, but also help establish a community of support among fellow students. Group work provides an opportunity for individuals to help themselves, as well as each other. It can influence personal, group, organizational and community problems (Harte, 1999-2001).

One advantage of support group therapy is in helping a participant realize that he or she is not alone, and that there is some level of shared experience amongst those within the group. Being in a support group can also help you develop new skills to relate to others. The dynamics of a group often mirror those of society in general, and learning how to interact with the other members can help one in relationships outside of therapy. In addition, the members of the group who have the same problems can support each other, and may suggest new ways of dealing with a particular problem.

Powell (2012) cites the National Center for Complementary and Alternative Medicine of the National Institutes of Health, which classifies Complementary and Alternative Medicine (CAM) therapies into five categories, one of which is mind-body interventions. Mind-body interventions consist of a variety of techniques used to enhance the mind's capacity to affect the body. The integration of mind-body practices as a means to reduce stress, depression and anxiety levels are a core concept of this research. By combining mind-body therapies with traditional mental health practices, such as psychoeducation and group work, it can provide additional benefits to the participants. Mind-body practices support health and well-being beyond just the physical. Integrating mindfulness and spiritual practices into one's life can positively impact both emotional and spiritual aspects of well-being as well. CAM therapies acknowledge that our brain can impact our body and how it functions, and our body can

impact our brain. Likewise, systems theory addresses the relationship between ourselves and our environment.

Systems theory is a fundamental theory on which the research is based. System theory acknowledges that there is ongoing interaction between a person and their environment. What impacts one part of the system affects the whole, as well as the other subsystems. Therefore, when a participant integrates a new practice into their lives, such as incorporating mind-body techniques, it affects the student as well as all other parts of the system such as their social and academic systems. All systems within an individual's life are interrelated and part of a whole. This research focuses on how an individual is acting within their environment. Through this research, we will evaluate what effect, if any, the practice of mind-body techniques has on the individuals stress, depression and anxiety levels (Urdang, 2008).

Program Description

The goals of the group session are threefold: (1) The sessions will provide psychoeducation pertaining to stress, anxiety and depression, (2) it will engage the participants in a variety of stress management techniques including meditation, guided imagery and breathwork, and (3) the group process will aid in supporting the participants in managing stress their stress.

There is very little risk involved with participating in the project. The hope is that participants will be able to use some relaxation techniques that they find helpful to them both personally and professionally. However, practicing mind-body techniques can impact people in ways they were not expecting. Mind-body practices can increase one's

awareness of thoughts, feeling and actions, and as a result, it can elicit an emotional response. In preparation to any potential adverse effects, mental health resources, both on and off campus, will be provided to participants during the first group session.

The stress management program was conducted on the Minneapolis campus of St. Catherine University with Associate degree nursing students. Participants were recruited via email and flyers posted in public areas on campus. The project consisted of three, 1-hour sessions occurring weekly during the month of February. Students were required to complete an intake form. Interested participants did this when they met with the facilitator. During this time the facilitator provided a brief overview of the stress management sessions, including: (1) The purpose of the pilot project, (2) the receipt of psychoeducation regarding stress, depression, anxiety and specifically test anxiety (3) the instrument/s to be utilized (DASS survey instrument, podcasts, apps), and (4) an explanation of the relaxation technique/s selected. During the second session, there was further discussion of how the relaxation techniques help alleviate stress-related symptoms. At the third and final session, the participants will practice some relaxation techniques and discuss movement meditations and yoga as a means for stress reduction. At the end of the session the DASS-21 (See Appendix C: DASS-21 Form) and the exit interview were given to participants to complete.

Students experienced guided imagery, meditation, and breathwork to help build coping skills. Participants will be expected to access, practice and record their utilization of self-service technologies during the period between the first and third group sessions.

Methods

Research Design

Nursing students participated in three group sessions over the course of a 3-week period. Participants received psychoeducation regarding stress, anxiety and depression, as well as practiced relaxation techniques via self-service technologies. The study used a mixed-method design, using both quantitative and qualitative approaches. The study included group work as a means of using the shared experience of being in nursing school and to help reduce feelings of social isolation among the participants. The study also required independent practice of mindfulness and relaxation practices. Participants were asked to practice as much as they prefer and for how long, however, participants were asked to practice a minimum of three times a week, for a minimum of three minutes each time using podcast, apps and other self-service technologies as their medium.

Participants attended an intake interview. During this time, potential participants were given an overview of the research study, and required to sign the informed consent form (See Appendix A: Informed Consent Form). Participants were asked to fill out an intake form. The intake form captures demographic information of the participants, as well as some general background regarding their general health and wellness.

The DASS-21 scale was used as the primary basis for determining if stress, anxiety, and depression levels of the participants were impacted as a result of participating in the stress management program. (See Appendix B: DASS-21 Scale) Participants completed the DASS-21 during the first group session, and again at the end of the third group session. Individual comparison as well as group comparison on the

DASS-21 scores will indicate what impact, if any, occurred as a result of the group sessions, and relaxation practices (See Appendix C: DASS-21 Scoring Form). The demographic information collected from the Intake Form and DASS-21 scores were analyzed to examine if any correlations exist (See Appendix D: Intake Form).

Throughout the 3-week period, participants were asked to practice relaxation techniques using self-service technologies. They were asked to maintain a practice log (See Appendix E: Practice Log Form). Again, the goal for frequency and length of time was to practice a minimum of three times a week, for a minimum of three minutes each time. The participant was exposed to a variety of practices, such as breathwork, autogenics, mindfulness meditation, and guided imagery. The participants were able to choose which practices they would prefer among a variety of options (See Appendix F: List of Podcast, Apps and Websites). This log was used as a means to gauge level of participation and compliance with stated expectation.

Lastly, participants were asked to fill out a three-question exit interview (See Appendix G: Exit Survey). These questions are open-ended. The intention of the exit interview was to allow participants an opportunity to reflect on their experience of the stress management series and to report what benefits, if any, they received from their participation in the stress management program and the use of technology.

Sample

Participants were recruited through email and from posted flyers on the St. Catherine University's Minneapolis campus. Students were given a \$10 Target gift card for each group session the participants attended. The group size of this research project

began with seven associate nursing students. Four of the students were in their first year of the nursing program and three were in their second and final year. All participants were women. Of the seven who began the program, six successfully completed all aspects of the program. Of the six who completed the program, half of the students had previously failed a nursing class during their time at St. Catherine.

Protection of Human Subjects

All written information was kept confidential. All paperwork was stored in a locked file cabinet, in an office that was also locked when not being occupied. Information of the participants was coded and stored on researcher's personal laptop, which was also password protected. The data collected was explicitly used for the purpose of this research. The researcher is a licensed social worker, and abides by the ethical standards set by the profession. All raw data collected will be confidentially destroyed as of May 30th, 2012.

Recruitment Process & Agency and Institutional Support

Approval was garnered from University of St. Thomas and St. Catherine University Institutional Review Boards (IRB). In addition, letters of support were received from the Dean of Associate Healthcare programs at St. Catherine University, as well as from the Director of the associate nursing program that manages the program from which the participants were solicited. Emails were sent to all Associate nursing students. Lastly, flyers were posted on the Minneapolis campus on which the research was conducted.

Data Collection Instrument and Process

Participants filled out an intake form regarding basic demographic data in addition to some variables that address some of their general health and well-being. Participants were asked to fill out a 21-question scale that assesses stress, depression and anxiety levels. This inventory is known as the DASS-21 (Depression, Anxiety, and Stress Scale). The participants completed this form as a pre-test during the first group session, and completed the scale again as a post-test at the end of the third group session. The pre-test and post-test scores were compared between each individual as well as in the aggregate. In between the group sessions, participants were asked to keep a practice log of the types of relaxation practice they use and to record the length of time. Students were asked to practice at least 3 relaxation techniques each week, for a minimum of three minutes each time. The participants turned in their practice log at the end of the third session. Additionally, each participant was asked to take an exit interview that consisted of the few questions to acquire some basic feedback regarding the participant's experience of the program.

Data Analysis Plan

A key question of the research is the difference in stress, anxiety and depression levels between the pre-tests and post-tests. It's important to not only examine individual scores, but also those in the aggregate. Once the pre-test and post-test data was known, it was important to examine if any independent variables acquired from the participant's intake interview, such as race or year in nursing, showed any correlation with stress, anxiety and depressions scores.

Additionally, it is important to examine whether the frequency of practice using self-service technologies, as well as total length of time, had any obvious impact on stress, depression and anxiety levels.

Finally, the exit interview will be important in gauging the participants' perceptions on their experience of the stress management sessions, the use of technology and what benefits, if any, they report from their personal experience.

Findings

Demographic Data

Six females participated in the stress management program and attended all three, group sessions. Three of the participants identified their race as being Caucasian, two as Black, and one as African American. Two participants were in their first year of their nursing program, and four were second year nursing students. Half of the students had previously failed nursing, and as a result, needed to resequence. Students are required to resequence after failing a nursing exam, which means the student is required to petition the program to be readmitted to the nursing program, then retake the nursing class that the student had previously failed. The nursing program at St. Catherine University permanently dismisses students who have scored below 78% more than once during the time they are taking nursing program classes.

In regards to general health habits, three out of six believed they were eating nutritiously. Three participants report getting adequate sleep, whereas two reported they did not, and one reported only sometimes. None of the students reported having regular exercise. All students reported having an adequate social support system.

DASS-21 Results

The DASS-21 form is made up of 21 statements that participants answered on a Likert scale. The DASS-21 was used as a pre-test and a post-test that participants fill-out at the beginning and end of the group sessions. Seven participants started the program and six of the seven finished the program.

Table 1 shows the sum of the scores related to anxiety, stress and depression between their pre-test and post-tests, along with the standard deviation. The scores show a decrease between pre-test and post-test scores for both anxiety and stress, however the standard deviation is large enough that there is no statistical significance.

Table 1. Average DASS Scores Between Pretests and Posttests

	Pretest	Stan. Dev.	Posttest	Stan. Dev.	Difference
Anxiety	6.5	4.8	3.67	2.3	2.83
Stress	7.5	2.4	5.5	3.8	2
Depression	4.2	2.8	4.2	3.7	0

There was a significant range in scores which accounts for the reason why the high standard deviation. Upon closer examination, the high scores correlated with the participants who had previously failed a nursing class, thus requiring them to resequence. Table 2 shows the resequenced participants (A-1, A-5, and A-6) and their high DASS score, where it was scored (pre-test and post-test), under which category (stress, anxiety or depression) compared to the three participants who had not resequenced (A-2, A-3, and A-4) by combining their scores to get an average score, as well as the standard deviation. There is a remarkable difference between the scores, and the standard deviation indicates that the group of students

who had not resequenced had scores in close proximity to one another with the exception of the post-test for the stress sub-scale.

Table 2. Resequenced Participant's Scores vs. Non-Resequenced Students

Resequenced participants	DASS high score	Pretest or Posttest	Average score of participants who have not resequenced (A-2, A-3, and A-4)	Standard Deviation
A-1	9	Pre Anxiety	4.3	1.5
A-5	15	Pre Anxiety	4.3	1.5
A-5	10	Pre Stress	6	1
A-6	11	Pre Stress	6	1
A-6	11	Post Stress	4.7	4
A-6	10	Post Depress	3.7	2.5

Although the participants who had resequenced had the highest DASS scores, they also demonstrated the greatest decreases in their anxiety and stress scores between the pre-tests and post-tests, as compared to the other students. In Table 3, participant A-5 made the greatest statistical change between their anxiety and stress pre-test and post-test scores.

Table 3. Resequenced Participants Score Differences

Resequenced Participants	Pre high score	Post Score	Difference
A-1 (anxiety)	9	6	-3↓
A-5 (anxiety)	15	3	-12↓
A-5 (stress)	10	3	-7↓
A-6 (stress)	11	11	0

Table 4, A-1 through A-6 are coded to represent the six participants that complete the stress management program. The numbers indicate the difference in scores of the individual participants between their pre-test and post-tests by category (stress, anxiety, depression). The downward facing arrows indicate decreases in their scores, which is the desired outcome.

Table 4. DASS Scoring of Individual Participants by Sub-Category

Study Participants	Difference between pre/post stress score	Difference between pre/post anxiety score	Difference between pre/post depression score
A-1	-1↓	-3↓	1
A-2	-4↓	-3↓	-1↓
A-3	-3↓	0	1
A-4	3	-3↓	-3↓
A-5	-7↓	-12↓	-3↓
A-6	0	4	5

In Table 4, four of the six participants showed decreases in their stress scores, as well as in their anxiety scores. Three of the six participants showed decreased in their depression scores. In Table 5, it shows which DASS items showed a decrease in scores among the group as a whole, by comparing participant's scores between their pre-tests and post-tests.

Table 5 accounts for the DASS items that showed a decrease in score. For example, the group of participants scored a total of 8 on the DASS pretest for item number 8, which stated "I felt I was using a lot of nervous energy". The total score on the post-test, and was five, for a difference of three. DASS #8, as well as DASS #1 demonstrated the largest difference in scores. DASS #1 being "I found it hard to wind down".

Table 5. DASS Items Showing Decreased Scores

DASS Item	Category	Pre-test Score	Post-test Score	Difference in Score
#8 I felt I was using a lot of nervous energy	Stress	8	5	-3↓
#1 I found it hard to wind down	Stress	6	3	-3↓
#12 I found it difficult to relax	Stress	7	5	-2↓
#6 I tended to over-react to situations	Stress	5	4	-1↓
#11 I found myself getting agitated	Stress	6	5	-1↓
#14 I was intolerant of anything that kept me from getting on with what I was doing	Stress	3	2	-1↓
#18 I felt that I was rather touchy	Stress	4	3	-1↓
#7 I experienced trembling (e.g. in the hands)	Anxiety	3	1	-2↓
#19 I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	Anxiety	5	3	-2↓
#9 I was worried about situations in which I might panic and make a fool of myself	Anxiety	5	4	-1↓
#15 I felt I was close to panic	Anxiety	4	3	-1↓
#20 I felt scared without any good reason	Anxiety	3	2	-1↓
#3 I couldn't seem to experience any positive feelings at all	Depression	3	2	-1↓

#17 I felt I wasn't worth much as a person	Depression	3	2	-1↓
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It is also important to note in Table 5, that although the largest differences were seen in the stress and anxiety sub-categories, participants on the pretests also rated them the higher. Whereas, the depression pre-test scores were low to begin with. Table 6, illustrates the DASS items that demonstrated an increase in scores. Three of the 4 DASS items were in the depression sub-category.

Table 6. DASS Items Showing Increased Scores

DASS Item	Category	Pre-test Score	Post-test Score	Difference in Score
#10 I felt I had nothing to look forward to	Depression	0	2	2↑
#16 I was unable to become enthusiastic about anything	Depression	2	3	1↑
#21 I felt that life was meaningless	Depression	1	2	1↑
#2 I was aware of dryness in my mouth	Anxiety	1	2	1↑

Table 7 shows the DASS items that were most frequently identified by participants and were scored highly. For example, on DASS item number twelve, "I found it difficult to relax", seven of seven participants identified this to some degree as having experienced. The total score for this DASS item is a total score of eight.

Table 7. Frequency Distribution of DASS Items

DASS Item	DASS Sub-Category	Most frequently scored DASS-21 line item (n=7)	Highest scored DASS Item
#8	Stress	7	8

I felt that I was using a lot of nervous energy			
#12 I found it difficult to relax	Stress	7	8
#9 I was worried about situations in which I might panic and make a fool of myself	Anxiety	5	8
#5 I found it difficult to work up the initiative to do things	Depression	7	8
#13 I felt down-hearted and blue	Depression	5	8

*Numbers based on a N=7 of pre-tests, a N=6 for post-test

Table 8 shows how frequently each participant reported practicing a relaxation technique along with the total length of time spent practicing. Results showed that there was a vast discrepancy between the time participants logged as practicing. Four out of the six participants met the minimum requirement for a total of three times a week, and all six participants met the time requirement.

Table 8. Data from Participant's Practice Log

Participants	Number of Times Spent Practicing	Number of Minutes Participants Practiced Relaxation Techniques using Self-Service Technologies
A-1	4	21
A-2	3	44
A-3	8	19
A-4	7	207
A-5	7	105
A-6	9	29

*Students practiced for a total of 2 weeks

Qualitative Results

All six participants acknowledged some benefit from participating the program. The common themes between the respondents was that they were better able to recognize when they were feeling stress and to what extent. They reported they found new ways of coping and managing their stress through the exposure of different mindfulness practices. Lastly, they acknowledged technology as resource for helping practice relaxation techniques. DASS scores did show a decrease in stress, anxiety and depression though it is not significantly significant. (See Table 1)

All participants stated they intend to continue practicing stress management techniques. A majority of the students expressed gratitude for the opportunity to participate in the stress management sessions. Several students commented on the need for these practices to be integrated into the nursing program. A couple students expressed a strong desire to continue the practice at home and integrate into family life.

Discussion

It is important to note that inferential statistics are unable to be used as a result of small sample size. Of the participants who attended each of the sessions, and practiced relaxation techniques using self-service technologies, six students completed the requirements of the study. Of the students who participated, Table 1 showed that the group demonstrated a decrease in stress and anxiety scores between the pretest and posttests from the DASS-21. Depression levels remained the same. Due to the fact that half of the participants had some high stress, anxiety and depression scores, it resulted in a high standard deviation among the group data. Despite this fact, it is important to note

that the participants who had the highest scores, all were students who had failed a nursing class in the past and subsequently resequenced. Of the students who had resequenced, these students scored higher stress, anxiety and depression levels than those who have not resequenced. Table 2 shows the resequenced students and line items in which they scored highest on. This table compared these individual high scores against the aggregate scores of the students who had not failed a nursing class. The table demonstrates a significant difference between the scores. As a result, it demonstrates that students who have resequenced are more likely to have high stress, anxiety and depression scores.

Of the participants who had not resequenced, one participant (A-4) did demonstrate a few marginally high numbers. This participant scored a nine on the pretest on the depression scale, as well as scoring a nine on the post-test, stress sub-scale. It is important to note this student did report during the week preceding the final stress management session, that she had experienced a traumatic event and was unable to practice any relaxation techniques for several days.

The participants experienced the greatest reduction of the following stress and anxiety symptoms from participation in the stress management program. Table 7 showed the DASS line items displaying the biggest decrease among the participants in comparing pre-tests and post-tests were related to stress and anxiety. Specifically, participants reported: 1) Experiencing less nervous energy, 2) finding it easier to wind down, 3) less trembling, and 4) less awareness of the action of their heart in absence of physical exertion.

The depression sub-scale results did not show the expected decreases, as well as stress and anxiety sub-scale results did. Table 5 highlights the DASS-21 items that showed decreased levels between the pre-tests and post-tests. Where as, Table 6 shows the DASS-21 items that had increased between pre-test and post-test. It is important to explore a possible reason why only depression scores increased. Could it be possible that participants in becoming more aware of their stress demonstrate higher depression scores? It is important to acknowledge that on Table 6, the depression scores were notably lower on the pre-tests, compared to the pretest scores on the stress and anxiety scores highlighted in Table 5.

There are limitations in western psychotherapy and the paradigm and academic training programs. There is often a focus on helping clients managing external forces rather than trusting one's self to help heal oneself and conventional psychological programs are slow to change curriculum. The perceptions of healing oneself versus fixing one's suffering because something (externally) is getting in the way of the healing process is one of the fundamental differences between mindfulness practices and psychotherapy. Integrative healing practices often draw from the position that we are allowing ourselves the opportunity to do what our body naturally knows to do.

It's important to acknowledge that this program was uniquely developed to meet the needs of women, in nursing school. This program emerged as a result of the literature review. The three key elements include: 1) practicing a variety of relaxation and mindfulness techniques 2) practicing these techniques through the use of self-service technologies, and 3) participating in group sessions where psychoeducation regarding stress, depression and anxiety was provided. To date there is not currently a program

set up to meet the needs of this specific population. Due to the small sample size, and due to the fact that the research is set up as a pilot project, it is important to continue to evaluate how these components, working together, aid in helps lower stress, anxiety and depression levels in college students. In this research, it is impossible to discern if the positive trends of the data are related to the use of podcasts, the support of the group process or the mindfulness practice itself.

All six participants acknowledged benefits from participating the program. Notably, several reported being better able to recognize when they were feeling stress and knowing new ways of coping and managing their stress through the exposure of different mindfulness practices. This is in accordance with Shapiro's (2000) meta-analysis of stress management programs in higher education, which concluded that students felt positively regarding their participation in stress management programs. Additionally, these students specifically recommended that this program become integrated as part of the Associate nursing program at St. Catherine University.

Strengths and Limitations

One of the strengths of the research is the mixed-method design. It provides an opportunity for the collection of evidence to be reported in multiple ways, which can add to the validity of the research. Using quantitative and qualitative data together has a complementary effect. This provides stronger evidence for a conclusion through the convergence and corroboration of findings. If the results of the qualitative and quantitative indicate similar outcomes, triangulation occurs and helps validate results. This can add insights and understanding that may be missed when only a single method is used. Using both methods together can increase the generalizability of the results.

Additionally, this approach produces more complete knowledge necessary to inform theory and practice.

The following can be seen as both a strength and weaknesses of the research study, which is the level of subjectivity and variation between participants in their practice of relaxation techniques, as well as the time commitment spent practicing. The participants have some flexibility in deciding which type of self-service technologies to use, frequency of use and length of time. The research design only used a minimum number of three times a week, for a minimum of three minutes. Due to the relative lack of structured time and practice, there is the potential for wide variation between participants, making it difficult to draw conclusions. However, the requirement of three times a week and for a minimum of three minutes is not too much of a burden, time wise. Additionally, it is difficult to see if certain practices, such as breathwork were more efficacious than other types of relaxation practices. It is also challenging to decipher if an app is more effective than a podcast. The variations between length of time, types of practice and technological medium are impossible to discern, particularly with a small sample size.

Another limitation of the study has to do with the fact that the stress management sessions are not designed within the nursing program. Aligning the information and practices to coincide with the curriculum and timing of quizzes, exams and clinical experiences could be a more effective integration of relaxation practices and psychoeducational content. Extending the duration of the stress management program may show better results and be more supportive of helping student integrate relaxation techniques. Lastly, the stress management sessions began and ended during the nursing

semester, which was not in sync with the ebb and flow of the nursing exams and clinical experiences.

The number of participants was less than ten. It is not a sufficient number to run inferential statistics using the quantitative data. Therefore, statistics can only be reported descriptively. The data is only indicative of trends. Any associations between variables are not well grounded and cannot infer direct correlations between independent and dependent variables.

Implications for Practice

Integrative practices such as breathwork and mindfulness have been shown to be an effective approach to managing stress and helping managing symptoms of depression and anxiety. Mind-body techniques help facilitate healing and complements western mental health practices. Continued integration of mind-body practices into counseling has several therapeutic benefits.

The potential of using technology as a means to help facilitate health and well-being has yet to be explored to it's fullest. Technologies, such as podcasts and apps are both a cost-effective, and accessible means for providing opportunities for health education and health practices. However, its benefits compared to traditional methods are unclear. Supplementing the use of self-service technologies as part of a more traditional practice, like group work may provide adequate support. For women in particular, the need to connect socially may be a critical part of their healing process.

Examining the integration of alternative therapies, in combination with traditional modes of therapy and the use of technology requires careful consideration

and further experimentation. Combining these practices has the potential help create health changes that are both accessible and affordable to people.

Participants reported several benefits from the program. Participants suggested that the stress management program become an integrated part of the nursing program at St. Catherine University. Stress management programs in higher education support acquiring stress management skills to students entering professions where people's lives depend on them.

Implications for Research

This pilot program has shown reasonable evidence that it is a worthwhile endeavor to continue to provide students. Further data collections are necessary in order to further collect and analyze data with a greater total number of participants. This would further assist in discovering the efficacy of the program, as well as substantiate whether there are correlations between variables.

One of the strengths of the research is the mixed-method design. It provides an opportunity for the collection of evidence to be reported in multiple ways, which can add to the validity of the research. Using quantitative and qualitative data together has a complementary effect. This provides stronger evidence for a conclusion through the convergence and corroboration of findings. If the results of the qualitative and quantitative indicate similar outcomes, triangulation occurs and helps validate results. This can add insights and understanding that may be missed when only a single method is used. Using both methods together can increase the generalizability of the results. Additionally, this approach produces more complete knowledge necessary to inform

theory and practice. In addition to the mixed-method design it is also important to do research that combines participant in group sessions, using integrative relaxing practices with self-service technologies as the medium in which they are practiced.

It is also important to assess the potential health habits, and environmental stressors that may be affecting participants in stress management program. In this research, the variable of whether the students had previously failed a nursing class seems to have had a significant effect on the mental health of the participants. One questions I would add to future studies, particularly at St. Catherine University would be to assess participants time spend participating in faith practices. St. Catherine University is a Catholic college, and should have been assess on the intake form of participants, and this may impact DASS-21 scores.

Further suggestions for future research on this subject would be to examine whether certain types of relaxation practices are more effective than others. Is there a time or frequency threshold that is most effective?

Lastly, although none of the participants directly mentioned the benefit of the group work and social support between the participants. It would be important in future studies to capture participant's feelings regarding the group process.

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Appendixes

Appendix A: Informed Consent

Appendix B: DASS-21 Scale (Pre-test/Posttest)

Appendix C: DASS-21 Scoring)

Appendix D: Intake Form

Appendix E: Practice Log

Appendix F: List of Podcasts, Apps and Websites

Appendix G: Exit Survey

Appendix A: Informed Consent

Using self-service technology for stress management: A pilot project RESEARCH INFORMATION AND CONSENT FORM

Introduction:

You are invited to participate in a research study investigating the use of technology and psychoeducation in helping manage stress, depression and anxiety levels. This study is being conducted by Carissa Morris, LSW at St. Catherine University. You were selected as a possible participant in this research because you are currently enrolled in the associate nursing program at St. Catherine University. Please read this form and ask questions before you decide whether to participate in the study.

Background Information:

The purpose of this study is to provide education on stress, anxiety and depression and for participants to utilize self-service technologies in helping nursing students manage stress. No more than 12 nursing students are expected to participate in this research.

Procedures:

When a potential participant makes contact with researcher regarding their interest in participating in the research project, the researcher will verify that the nursing student has not had more than 3 substantive one-to-one meetings with the principal investigator of the research project through her role as staff with the Access and Success program at St. Catherine University. The principal investigator will verify this by looking up client records to access potential history as a client in professional role. If substantive contact has been made (3 or more one-to-one contacts), the nursing student will be informed that they are ineligible to participate and referrals to mental health resources will be made. Those who are eligible to participate will be given an informed consent form outlining the extent of the research. Principal researcher will be ask questions to ensure their understanding of the research as well as ask if he/she had any further questions regarding the research or their participation in it. Participants will be enrolled in the research on a first come, first serve basis, until the maximum of 12 participants is reached.

In order for a nursing student to take part in the research, he/she will need to set up an initial meeting with the researcher. The researcher will have mental health resources available during this meeting.

If you decide to participate, you will be asked to participate in an intake interview, attend the 3 group session, currently scheduled for Feb. 10th, 17th and 24th 2012. As a participant in the stress management program, you will need to attend three, 1-hour group sessions occurring in February 2012, as well as practice and record a minimum of 3 relaxation exercises a week, throughout the duration of the program. The first session will be held Friday, Feb. 10th, second session on Feb. 17th and the final session on Feb. 24th . I am limiting the number of participants to no more than 12 associate-level nursing students.

The goals of the group session are threefold, 1) the sessions will provide psychoeducation pertaining to stress, anxiety and depression. 2) It will engage the participants in a variety of stress management techniques including meditation, guided imagery and breathwork, 3) and the group process will aid in supporting the participants in managing stress their stress.

"Homework" will be assigned in-between group sessions. Satisfactory completion of this "homework" involves using technology as a means to practice stress relaxation techniques. Technology may include using a computer, smartphone, iPad or similar equipment. Students will use online videos, podcasts or apps that provide guided meditation, guided imagery or breathwork. Participants will be expected to engage in the stress management technique for a minimum of 3 minutes, 3 times a week. As the facilitator, I will provide you with several options from which to choose from.

Because it is a research project, I will be collecting some very basic information about you before beginning. All participants will be asked to answer a 21-question stress, anxiety and depression scale both before and after participating in the program. The initial DASS-21 will be filled out during the 1st group session. The final DASS-21 will be completed during the 3rd session. All participants will be provided with mental health resources both on campus, and in the community at each group session. During the 1st and 3rd group sessions, when the participants complete the DASS-21, they will be given information on how to evaluate how they scored. Participants will not be asked to share their results publicly. The researcher will use the DASS-21 as a reference while providing psychoeducation on the stress response, depression and anxiety, in particular among college students. Participants will also be practicing stress management skills during the group sessions. Participants will be asked to write down the dates and length of time they practice their "homework" and to answer a 3 question, exit interview during the 3rd and final group session. All identifying information will be seen by me and me only. Confidentiality statements will be made at the beginning of each group session. A confidentiality statement will be made by the researcher assuring that all information discussed in the group will be held confidentially by the facilitator and it is also expected among the participants. Once the data is collected, it will be publicly shared, but no individual names will be identified.

This study will take no more than 5 hours total. Attending the 3 group sessions will take 3 hours. The initial intake interview will likely take approximately 30 minutes. Students will be asked to practice meditation and/or guided imagery outside of scheduled meetings that must be a minimum of 9 minutes each week for a total of 3 weeks.

Risks and Benefits:

The study has minimal risks. The hope is that participants will be able to use some relaxation techniques that they find helpful to them both personally and professionally. However, those who practice mind-body techniques may gain some personal insight or awareness that they were not expecting and it can elicit an emotional response. If that were to happen, I could assist you in referring you for additional professional support.

Participation in stress management classes are completely voluntary.

Although a confidentiality statement will be made at each session, it is important to note that the researcher can not guarantee what other participants may do in regards to maintaining confidentiality.

The only direct benefit participants may receive by participating in the study is the \$50 Target gift card. Of which, 2 will be raffled off to those who attended all 3 group sessions.

Confidentiality:

Any information obtained in connection with this research study that could identify you will be kept confidential. In any written reports or publications, no one will be identified or identifiable and only group data will be presented. (If it applies to your study, include ways in which you will maintain confidentiality, e.g., "No one in the daycare center will know your child's results." If you release information to anyone for any reason, you must state the persons or agencies to whom the information will be furnished, the nature of the information to be furnished, and the purpose of the disclosure.)

I will keep the research results in a password protected computer and a locked file cabinet in researchers home and only I and my advisor will have access to the records while I work on this project. I will finish analyzing the data by May 31st, 2012. I will then destroy all original reports and identifying information that can be linked back to you.

Voluntary nature of the study:

Participation in this research study is voluntary. Your decision whether or not to participate will not affect your future relations with St. Catherine University in any way. If you decide to participate, you are free to stop at any time without affecting these relationships, and no further data will be collected.

Contacts and questions:

If you have any questions, please feel free to contact me, Carissa Morris, at 651-497-8518. You may ask questions now, or if you have any additional questions later, the faculty advisor, Philip Auclair, PhD 612-752-8181, or I will be happy to answer them. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact John Schmitt, PhD, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739.

You may keep a copy of this form for your records.

Statement of Consent:

You are making a decision whether or not to participate. Your signature indicates that you have read this information and your questions have been answered. Even after signing this form, please know that you may withdraw from the study at any time and no further data will be collected.

Signature of Participant

Date

Signature of Parent, Legal Guardian, or Witness
(if applicable, otherwise delete this line)

Date

Signature of Researcher

Date

Appendix B: DASS-21 Scale (Pre-test & Post-test)

DASS21	Name:	Date:
<p>Please read each statement and circle a number 0, 1, 2 or 3, which indicates how much the statement applied to you <i>over the past week</i>. There are no right or wrong answers. Do not spend too much time on any statement.</p> <p><i>The rating scale is as follows:</i></p> <p>0 Did not apply to me at all 1 Applied to me to some degree, or some of the time 2 Applied to me to a considerable degree, or a good part of time 3 Applied to me very much, or most of the time</p>		
1	I found it hard to wind down	0 1 2 3
2	I was aware of dryness of my mouth	0 1 2 3
3	I couldn't seem to experience any positive feeling at all	0 1 2 3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0 1 2 3
5	I found it difficult to work up the initiative to do things	0 1 2 3
6	I tended to over-react to situations	0 1 2 3
7	I experienced trembling (egg, in the hands)	0 1 2 3
8	I felt that I was using a lot of nervous energy	0 1 2 3
9	I was worried about situations in which I might panic and make a fool of myself	0 1 2 3
10	I felt that I had nothing to look forward to	0 1 2 3
11	I found myself getting agitated	0 1 2 3
12	I found it difficult to relax	0 1 2 3
13	I felt down-hearted and blue	0 1 2 3
14	I was intolerant of anything that kept me from getting on with what I was doing	0 1 2 3
15	I felt I was close to panic	0 1 2 3
16	I was unable to become enthusiastic about anything	0 1 2 3
17	I felt I wasn't worth much as a person	0 1 2 3
18	I felt that I was rather touchy	0 1 2 3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0 1 2 3
20	I felt scared without any good reason	0 1 2 3
21	I felt that life was meaningless	0 1 2 3

Appendix C: DASS-21 Scoring Form

DASS	Scoring Template
<p style="text-align: right;">S A D A D S A S A D S S D S A D D S A A D</p>	

Apply template to both sides of sheet and sum scores for each scale.
For short (21-item) version, multiply sum by 2.

Appendix D: Intake Form

Intake Interview Form

Participant Name _____

Email _____

Phone
Number _____ Date _____

1) Gender (circle one) Male/Female

2) Ethnicity: (check all that apply)

_____ African American

_____ Black

_____ Caucasian

_____ Asian

_____ Hispanic

_____ Native American

_____ Other

3) Year in program (check one)

_____ 1st year Nursing student

_____ 2nd year Nursing student

4) Have you ever had to reapply to nursing program after not being academically successful in a nursing class? Yes No

5) Do you get adequate exercise? Yes No

6) Do you eat nutritional food each day? Yes No

7) Do you sleep well? Yes No

8) How would you rate your social support system?

1	2	3	4	5
No support		some support		very supportive

Appendix F: List of Podcasts, Apps, and Websites

Websites & Audio and Video Podcasts

1. <http://www.youtube.com/watch?v=OoM57Z8dRUY>
2. <http://www.youtube.com/watch?v=7wFX9Wn70eM>
3. <http://marc.ucla.edu/body.cfm?id=22>
4. http://www.youtube.com/watch?v=C8AgdL_hTig&feature=related
5. <http://www.youtube.com/watch?v=IsSQx5GIwEw&list=UUzM1uzyY89NFYZxr7j00KXA&index=23&feature=plcp>
6. <http://www.youtube.com/watch?v=PqWpt1xyn8A>
7. <http://www.youtube.com/watch?v=obYJRmgrqOU>
8. <http://www.youtube.com/watch?v=Q6f-tovTi4E>
9. <http://www.youtube.com/watch?v=HFwCKKa--18>

Apps

1. Naturespace: Relax meditate escape sleep. Holographic Audio Theater, Version 3.0
2. Universal breathing-Pranayama free. Saagara, Version 2.6.
3. Breathe2Relax. The national center for telehealth and technology. Version 1.2
4. Stress relief self-hypnosis for iPad. Ppl Development Company LLC. Version 1.1

