

## ABSTRACT

SCHWARZE, MARK JASON. Assessing the Effectiveness of Mindfulness-Based Cognitive Therapy in Individual Sessions in Reducing Self-Reported Stress and Increasing Self-Reported Mindfulness Levels of a Nursing Student. (Under the direction of Dr. Edwin R. Gerler, Jr.)

The purpose of this dissertation was to explore the effectiveness of a modified Mindfulness-Based Cognitive Therapy (MBCT) intervention using an individual modality in reducing self-reported stress and increasing the levels of self-reported mindfulness in a nursing student. The research questions were: (1) Does using MBCT in individual sessions increase the self-reported level of mindfulness for a nursing student? (2) Does using MBCT in individual sessions decrease self-reported levels of stress for nursing a student? An AB single-subject experimental design replicated five times was used. The researcher collected baseline data and completed six weeks of a MBCT intervention with five nursing students in effort to see if self-reported levels of mindfulness increased and self-reported levels of stress decreased. The MBCT intervention was modified for length and modality. Results indicated that using a modified MBCT intervention in individual sessions reduced stress as measured by the Perceived Stress Scale (PSS; Cohen & Williamson, 1988) in four out five participants and increased mindfulness levels as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) in all five participants. Implications for college counselors and nursing educators were provided. Areas of future research include additional testing of MBCT with nursing students and other academic programs, as well as the use of MBCT with technological delivery methods.

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Assessing the Effectiveness of Mindfulness-Based Cognitive Therapy in Individual Sessions  
in Reducing Self-Reported Stress and Increasing Self-Reported Mindfulness Levels of a  
Nursing Student

by  
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## **DEDICATION**

This dissertation is dedicated to my wife Chasity. Your strength, support, and love have surely made me a better man, and for that, I thank you. Additionally, this dissertation is dedicated to my mother, who by example, taught me how to be strong.

## **BIOGRAPHY**

Mark Schwarze was born in Marietta, Ohio but has lived in Lumberton, NC since he was four-years-old. He has worked in the counseling and substance abuse fields since 1997.

Mark has a Bachelor of Arts in English Literature and a Master's of Arts in Service Agency Counseling both from the University of North Carolina at Pembroke. He is currently pursuing his Doctor of Philosophy in Counselor Education at North Carolina State University. He is a Licensed Clinical Addiction Specialist, Certified Clinical Supervisor, Licensed Professional Counselor, and a Nationally Certified Counselor. He is a member of the American Counseling Association, American College Counseling Association, National Association of Alcohol and Drug Abuse Counselors, and the Addiction Professionals of North Carolina.

Mark began in the substance abuse field in 1997 working in prevention and intervention at with high-risk adolescents in Lumberton, NC. There he developed and led two programs, The Robeson County Teen Court Program, and The Palmer Music Industry Program, both aimed at providing alternatives to drugs and alcohol to low income, high-risk adolescents. During this time he did extensive writing for local media that commented on the stigma of addiction in rural settings, as well serving on the Treatment Committee for APNC.

In 2002, he accepted a position as a counselor in the Intensive Outpatient Program at the Wilmington Treatment Center. Here, he continued to be an advocate for those with the disease of addiction. He gave presentations and talks to any organization who asked to learn more about chemical dependence.

In 2005, Mark was offered the position of Counselor and Substance Abuse Services Coordinator at the University of North Carolina at Pembroke. It is here that Mark has practiced, researched, and developed college counseling initiatives and programs. His interest in nursing student stress came after seeing a need for better understanding by college counselors of the specific field-related stressors across academic programs. Mark has presented extensively on this subject and hopes to use the current research to outline better counseling services for nursing students.

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I would first like to thank my family. My wife Chasity has been a rock, not only throughout this program, but throughout our lives. She never doubted I would prevail, even on the days that I was sure I wouldn't. A special thanks to my mother who gave so much to me and asked for so little. I wish you could be here to see this. Thank you to my sisters, Lynn, Sandra, & Cindy, for always being there and loving me. Also, thank you to everyone in my immediate and extended family who gave a supportive word or statistics tutoring session. Both were greatly appreciated. Much love to my dog Doc, who always looked at me like I had a Ph.D.

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# CHAPTER 1

## INTRODUCTION

### **Stress and the Nursing Student**

It has been reported that college students experience a significant amount of stress in their efforts to adjust and thrive in an environment that offers many new experiences and challenges. (Deckro, et al., 2002). There has been a dramatic increase in college student stress levels in the past 30 years (Sax, 1997). Major stressors commonly shared by students include financial struggles, academic and employment pressures, and interpersonal conflicts (Darling, McWey, Howard & Olmstead, 2007). Stress related to academic performance can be especially problematic in that studies have shown that it can cause problems in concentration, memory, and problem-solving ability (Beddoe & Murphy, 2004). The Spring 2010 American College Health Assessment's National College Health Assessment (ACHA, 2010) listed stress as the number one impediment to academic success for college students. In their study of undergraduates, Pritchard and Wilson (2003) found that students reporting higher levels of stress were more likely to have a lower GPA. When these stressors make it significantly difficult for students to cope, the emotional and physical impact can be debilitating. The demands of college can apply a constant stream of stressors that can lead to emotional exhaustion (Jacobs & Dodd, 2003). Left unchecked, ongoing stress can lead to depression, anxiety (Segrin, 1999) and a host of physical ailments (Misra & McKean, 2000).

Students training to be nurses at the university level are subjected to high levels of stress and report higher levels than students from other health professions (Beddoe & Murphy, 2004). Undergraduate nursing students have been found to be at a greater risk for

developing mental health issues than other students (Jones & Johnston, 1997). Magnussen and Amundson's (2003) review of the literature on the nursing student experience found several factors leading to stress, including balancing home and academic demands, experiencing time management pressures and financial problems, lacking meaningful connections with the nursing faculty, and feeling unprepared and incompetent in clinical practice.

Stress can be defined as a reaction that an individual has to his or her own environment (Kless, 1989). When the environment asks more of what an individual perceives he or she is capable of, stress occurs. The level of stress that one may experience is proportionate to the perception of what the consequences would be for not adapting to the demand (Pelletier, 1977). Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen, (1986) define stress as a cognitive process based on an assessment of events or situations and not the actual events or situations.

Using this definition, stress appears to derive from feelings of inadequacy about nursing students' ability to perform clinical tasks and care for dying patients and from interpersonal conflicts with other staff members (Admi, 1997). Students also report significant classroom-related stress due to large quantities of information to learn, exam anxiety, and the perception that family members do not support their goals (Hamill, 1995).

Research findings on how stress in nursing programs leads to irrational anger and stress suggested five sources that were common among the participants (Thomas, 2003). Students who perceived the nursing faculty as unfair, rigid, or discriminatory, or who had unrealistic or highly critical styles developed anger and disappointment with their nursing

program. Other sources of anger and stress included unresolved personal and family issues and unexpected changes in the nursing program. Unresolved family issues such as strained and unhealthy relationships with parents or spouses can lead students to having feelings of transference toward faculty members who may be critical of their performance (Shirley, 2007). Two common sources of anxiety for nursing students are cited as negative interactions with a faculty member and the fear of making a mistake in a nursing clinical (Kleehamer, Hart & Keck, 1990). It is clear that students in nursing programs experience significant amounts of stress from trying to balance their home lives with their academic responsibilities. When students have few coping skills or resources to deal with this stress, emotional distress can be the result. It is imperative that counselors in college settings are aware of effective interventions that are developed to help nursing students reduce stress and be successful in their training programs. Mindfulness-Based Cognitive Therapy (MBCT) has shown promise in helping people reduce negative emotions such as stress (Collard, Avny, & Boniwell, 2008; Teasdale et al., 2000).

### **MBCT as a Conceptual Framework**

Seeing a need to develop an intervention to help with patients who had repeatedly relapsed back into depression, Segal, Williams, & Teasdale (2002) developed MBCT, a manualized program of therapy. Designed as an eight-week program with specific guidelines for each session, MBCT was originally conceived as a group modality. Clients are placed in classes to learn the mindfulness and cognitive-behavioral (Beck, Rush, Shaw, & Emery, 1979) skills needed to regulate emotions and thoughts. MBCT involves training the mind to avoid judgmental reactions to events, thoughts, feelings, and body sensations, and to practice

nonjudgmental awareness and acceptance (Ma & Teasdale, 2004). Essentially, MBCT can help bring greater attention to the present, while avoiding the anxiety of the future and the depression of the past. While primarily a model of therapy, MBCT contains operationally defined constructs that are consistent and testable. The concept of mindfulness is the central construct in MBCT.

### **Mindfulness**

Mindfulness, derived from Zen Buddhism, has been described as a commitment to bringing awareness back to the present moment (Harrington & Pickles, 2009). Far from being an abstract concept, mindfulness has seen a surge of research in the past decade. Shapiro (2009) reports over 260 articles have been published about mindfulness in the psychological literature. Brown and Ryan (2003) defined mindfulness as ‘the state of being attentive to and aware of what is taking place in the present.’ Despite a prolific research base, mindfulness as a testable and operationally defined variable is still being shaped.

Bishop et al. (2004) proposed an operational definition of mindfulness as a two-component skill building approach to responding to emotional and cognitive distress. The first component involves the self-regulation of attention. Three measurable skills have to be obtained to reach a successful level of self-regulation of attention. The skills of sustained attention, switching, and inhibition of elaborative processing involve the ability to maintain a state of flexible and non-judgmental focus and awareness over a period of time. For example, a nursing student in a clinical experience may experience significant anxiety. The students’ emotional distress in turn causes poor performance in the clinical task. Utilizing sustained attention and switching means the student actively chooses a neutral point of focus,

say breathing, and actively chooses to focus on the breaths. If anxious thoughts enter the mind, the student acknowledges that they are there, but then switches focus back to breathing. This promotes inhibition of elaborative and busy thought streams that could create emotional distress. Mindfulness is a process of thought redirection to what is present and real.

The second component as defined by Bishop et al. (2004) includes developing an orientation to experience. In this orientation, all thoughts, feelings, and sensations are acknowledged. The purpose is not to evaluate or reframe as in cognitive therapy, but just to learn to accept whatever is happening with an open mind. Additionally, developing this orientation to experience involves a heightened sense of awareness that may lead to new perspectives on common experiences. Many times, nursing students experience the vicarious traumatization of other students' failures. Students who maintain an open-mind, curiosity, and acceptance of all experiences will experience the nursing program in their own unique way.

All of these skills within the two components can be measured utilizing a variety of psychological tools. This will allow more scientific validity in testing mindfulness-based interventions. In the case of nursing student stress, counselors working with this population can capitalize on the already existing knowledge base nursing students have incurred through their training program about health, wellness, and self-care. Burkhardt and Nagai-Jacobson (2001) posited that for those entering the helping field, it is important to learn to care for and nurture themselves. Nursing students have unique knowledge and orientations toward health. MBCT is a holistic mind/body approach and would embrace this existing knowledge

and help the student to internalize it. These activities can be lifelong skills that will help decrease stress and burn-out in school and future employment.

### **Scope of the Problem**

Because of the high stakes academic atmosphere in nursing education, fewer young people are choosing nursing as a viable career option (Magnussen & Amundson, 2003). Balancing this trend against the increasing average age of nurses currently in practice, Buerhaus, Staiger and Auerbach (2000) have predicted that 40% will be over the age of 50 years old by the end of 2010. This has led to a nursing shortage crisis. In addition, stress, combined with other issues has led to significant attrition rates of 20% to 41% for all nursing programs (Moore, 1996). Stickney (2008) found that the number of new students in nursing programs is too low to ensure an adequate amount of to meet the future needs of health care agencies. Improving efforts to retain nursing students is one of the three strategies suggested by the Florida Center for Nursing (2005) to assuage the national nursing shortage. It is imperative that nurse educators, college administrators, and college counselors help nursing students to assess their stressors, and more importantly develop effective interventions to address them effectively.

There is some evidence of effectiveness in reducing stress in using mindfulness-based interventions (Grossman, Niemann, Schmidt, and Walach, 2004). Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990), was the structural and conceptual inspiration for MBCT. Grossman et al. (2004) conducted a meta-analysis of 20 MBSR studies and found it helpful for individuals with a broad range of problems.

MBSR is a comprehensive and specific approach that uses meditation as its core component (Proulux, 2003). Deckro, et al., (2002) examined the effect a mind/body intervention similar to MBSR would have on college student's levels of psychological distress, anxiety, and perceived stress. The 6-week randomized controlled design study taught skills that could be categorized into relaxation response and cognitive behavioral techniques. Relaxation response included breathing and muscle relaxation exercises, guided imagery, yoga, and mindfulness. The cognitive behavioral interventions consisted of identifying automatic thoughts, challenging cognitive distortions, and goal setting. The results indicated significant drops in levels of psychological distress, anxiety and perceived stress for the intervention group compared with a waiting list control group. Interestingly, the study experienced a 30% dropout rate of participants in the intervention group who mostly stated that they had no time to attend the sessions. Another issue was that this study utilized participants from a wide range of age groups and academic majors and did not take into account the specific stressors associated with these variables.

Empirical studies completed specifically with nursing students have been limited. One study (Beddoe & Murphy, 2004) utilizing MBSR focused on undergraduate nursing students who participated in an 8-week MBSR course to reduce stress and improve empathy skills. The researchers suggested that mindfulness-based stress reduction allows participants to approach life directly and without judgment. It promotes a here and now focus and discourages preconceived expectations. The researchers taught participants techniques such as progressive relaxation body scans, sitting and walking meditations, and yoga. Although

the sample size was small (N=16), and no control group was used, the results indicated significant decreases in anxiety levels and increased ability to handle stressful events.

### **Purpose of the Study**

While there is evidence of the effectiveness of using MBSR with nursing students, nowhere did I find literature discussing the use of MBCT with this population. The purpose of this study was to explore the effectiveness of using MBCT to help nursing students reduce stress during their professional training program. Because MBCT maintains more easily accessible aspects such as meditation and cognitive exercises, it is more easily introduced and practiced by those who have a limited amount of time outside of therapy sessions.

Specifically, this study utilized a modified version of MBCT in individual sessions to teach and process the MBCT core skills of mindfulness meditation and cognitive decentering. While MBCT has mostly been utilized in group formats, there is some argument that this is not always the best approach. Kuyken et al. (2008) found that 5% of eligible sample for their MBCT study declined participation because they did not like the group aspect of the intervention. Lau & Yu (2009) suggests that offering mindfulness-based treatments in an individual format might increase participation for those who are reluctant to be involved in group settings for whatever reason. Nursing students, especially those enrolled in the same program, may be in this category due to potential boundary conflicts that come with dual memberships in both therapy and an academic program. This study added to the literature in that no research appears to be available in measuring the efficacy of MBCT in individual sessions.

Therefore, the research questions for this study were as follows: (1) Does using MBCT in individual sessions increase the self-reported level of mindfulness for a nursing student? (2) Does using MBCT in individual sessions decrease self-reported levels of stress for nursing a student? The hypotheses for the study were as follows: (1) Utilizing MBCT in individual sessions will increase the participant's level of self-reported mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). (2) Utilizing MBCT in individual sessions will decrease the participant's level of self-reported stress as measured by the Perceived Stress Scale (PSS; Cohen & Williamson, 1988).

The research design for this study was a single-subject experimental design replicated five times to enhance external validity. Heppner et al. (1999) state that single-subject experimental designs provide a good measure of change in an individual as variables are examined multiple times and can provide baseline and intervention measurements. Additionally, when examining the efficacy of a particular counseling theory to create change in an individual, single-subject experimental designs have significant historical context (Heppner et al., 1999).

Chapter 2 of this dissertation includes a review of the connection between college counseling and student outcomes in the areas of retention, academic performance, and emotional well-being. This establishes the importance of counseling services on college campuses for students struggling with stress and other mental health issues. Next, literature supporting partnerships between college counseling centers and professional training programs was offered. Also, relevant literature pertaining to interventions, both qualitative and quantitative, used with nursing students to reduce stress was reviewed. A discussion of

the impact that culture, specifically Native American culture, has on the stress experiences of nurses and nursing students was offered as it intersects with MBCT philosophies and could provide direction for future research in this area. Also discussed in Chapter 2 is some historical and philosophical context for MBCT, as well as a review of MBCT interventions, critiques of MBCT theoretical foundations, and MBCT's stance on past, present, and future oriented thinking for nursing students.

Chapter 3 of this dissertation presented the methodology for this single-subject experimental design that was replicated five times. A justification for the selection of this design was presented. A complete description of dependent measures and a detailed outline of the MBCT interventions utilized were provided. Finally, a data analysis plan was offered.

Chapter 4 details the results of the individual experiments and offer descriptive statistics, as well as a visual analysis of the data over time. Figures were provided to visually depict the dependent measure results. Chapter 5 provided a discussion of the implications of these results for college counselors and others working with nursing student stress. Additionally, limitations of the study and future areas of research in nursing student stress and MBCT were offered.

Research was presented in this chapter that emphasizes the importance of developing effective interventions to help nursing students reduce their stress levels. It is hoped that by accomplishing this task, it will increase the number of nursing students completing their training program and moving into occupations as professional nurses, thereby alleviating the ongoing nursing workforce shortage.

## **Definitions of Terms**

For the purpose of this study, and because MBCT is a relatively new therapy model, it is appropriate to provide a definition of terms. Nursing training programs also have specific and technical terminology that would benefit from further explanation. The definitions provided below are by no means exhaustive, but meant to help obtain a base of information needed to understand components of this study.

(a) Mindfulness-Based Cognitive Therapy ( Independent Variable) – A model of therapy that utilizes elements of cognitive-behavioral therapy and concepts of mindfulness to focus thoughts on the present and learn acceptance and non-judgmental interpretations (Segal et al., 2002).

(b) Mindfulness (Dependent Variable)- Mindfulness, derived from Zen Buddhism, has been described as a commitment to bringing awareness back to the present moment (Harrington & Pickles, 2009).

(c) Self-Reported Stress (Dependent Variable)– Stress that is appraised cognitively surrounding events and situations in one’s life. Often measured by self-report. (Cohen, Kamarck, & Mermelstein (1983).

(d) Meditation - Meditation has many forms, but is ultimately the practiced skill of quieting the mind. The most traditional and common usage is a breathing meditation (Wright, 2007).

(e) Cognitive Decentering – Viewing negative thoughts and feelings as passing events in the mind and not reflections of reality (Segal et al., 2002).

(f) Nursing Clinicals- Experiential learning experiences that take place in real health care settings, allowing the student to practice basic nursing skills under supervision.

## CHAPTER 2

### LITERATURE REVIEW

#### **Introduction**

The goals of this review were to review the connection between college counseling and student outcomes in the areas of retention, academic performance, and emotional well-being. Next, literature supporting partnerships between college counseling centers and professional training programs was offered. Also, relevant literature pertaining to interventions used with nursing students to reduce stress was reviewed. Theoretical approaches as well as intervention modalities such as group and psychoeducation is discussed. Additionally, culturally sensitive approaches to working with ethnically diverse nursing students and nurses were reviewed. Specifically, Native American cultures have addressed nurse and nursing student issues utilizing culture and tradition that may be applicable to modern nursing program environments. Also, the historical and philosophical context of MBCT were reviewed, as well as a discussion of MBCT interventions, critiques of MBCT theoretical foundations, and MBCT's stance on past, present, and future oriented thinking for nursing students and how that can impact perceptions of stress.

The literature search strategies included an examination of nursing education and practice journals, as well as the *Journal of College Counseling*, and other journals related specifically to the psychology and counseling needs of college students. Most of the literature related specifically to this topic has come from nursing journals and less from the college counseling literature. There seems to be a deficit of research in counseling journals related to interventions for students in specific academic or professional programs. A

comprehensive review of the literature surrounding MBCT was conducted through traditional and online journal databases such as ERIC, NC Live, EBSCO, Google Scholar, and Psych Lit through North Carolina State University and The University of North Carolina at Pembroke.

### **College Counseling and Student Outcomes**

Kitzrow's (2003) often cited examination of mental health issues facing college students today found increasing severity of mental illness and increasing numbers of students seeking services without increased funding for counselors. It appears that college counseling centers are being asked to do more with less in spite of the fact that a great deal of research exists that suggests that counseling has a positive impact on student success (Bishop & Walker, 1990; Illovsky, 1997; Wilson, Mason & Ewing, 1997). While the research is sparse on college counseling's effect on students in professional training programs, it is well documented for college students in general. Three specific outcomes that college counselors can influence in students are retention, academic performance, and emotional adjustment.

#### **Retention.**

While retention was not a variable be measured in this study, it is an important that it is discussed here due to the high attrition rates of nursing students. Student retention is an important component of student success for obvious reasons. However, much attention to retention efforts is placed on identifying and developing academic skills or study habits (Stickney, 2008). College counselors can offer solutions to retention issues faced by students.

Wilson, Mason and Ewing (1997) suggested that college counseling helps students learn skills that increase retention. To test this theory, the academic records of 562 students

who requested personal counseling within a one year period at a college counseling center at a large public university in the Midwest were examined. Academic outcome was reviewed after a two year interval from the time counseling was received. The results of the study showed that students who received counseling during the specified time frame had a 14% retention advantage over students who did not receive counseling. The fact that counseled students self-selected for services may influence the interpretation of results. However, base line data such as ACT scores and high school rank were the same.

The student counseling center at the University of Idaho developed a collaborative work group with academic and student affairs departments to shift thinking from parts to a whole (Phillips-Miller & Morrison, 1999). There was a systemic approach to retention utilizing several departments on campus and linking services that assisted the student in making effective decisions. The benefit, besides student retention, was the counseling center's development of new relationships with other offices that helped increase their visibility.

### **Academic Performance.**

Again, while not a variable measured in this study, developing effective counseling interventions for nursing students can increase their academic performance. Students who struggle academically are often times dealing with significant emotional and interpersonal difficulties (Call, Hendricks and Jones, 1990). College counselors may do well to adopt a comprehensive approach addressing not only the psychological issues of the student, but the academic ones as well. Wlazelek and Coulter (1999) evaluated the effect an academic counseling approach would have on undergraduate students who had been placed

on academic warning or probation. Their academic counseling approach went beyond traditional academic advising models and addressed the emotional and personal concerns of students as well as their academic concerns. The researchers analyzed data on 414 participants on academic warning or probation who had been referred for academic counseling at the university counseling center. Groups were divided into those participants who had no involvement, participants who attended one session, and those who attended more than one session. The results showed that students who attended one or more sessions showed a significant increase in GPA after one semester of participating in the intervention.

For nursing students specifically, academic distress is a substantial problem. Maville, Kranz and Tucker (2004) posit that stress specific to nursing students can be divided into two academic categories: Clinical issues and classroom issues. The researchers examined stress levels of nurse practitioner (NP) students in a Master of Science nursing program. The purpose of the study was to understand the stress experiences of nursing students. Much research has been done on the stress levels that nursing students experience. Some of this research suggests nursing students experience higher levels of stress in their preparation and academic program than students in other health care disciplines. These stress levels contribute significantly to program attrition, substance abuse and mental health problems. The source of the stress can often be traced back to the pressure of performing in real clinical scenarios, and the vast amount of technical knowledge required in the academic preparation. Most attempts at understanding this phenomenon has been attempted using quantitative research methods.

The researchers in this study utilized a grounded theory methodology in hopes to provide a fuller understanding of specific stress experiences of nursing students. A convenience sample of 12 students in a nursing program was utilized. The guiding theoretical framework for this study was Cox's (1991) interactionist model of stress. Utilizing a guided interview process, the researchers tape recorded the interviews and clustered the responses into themes that identified emerging categories. The categories were analyzed against data and collapsed to create theoretical labels. With these labels the researcher then conducted a literature review to interpret the labels. Based on six qualitative questions, the following themes emerged: Students became NPs for autonomy and increased ability. Causes of stress included financial, high-level demands by faculty, and teaching/learning relationships. As to ways to reduce stress levels in the program, the theme was for faculty and students to take responsibility for their own actions. Another major theme included the loss of time spent with family and friends as a major factor of stress.

Suggestions by the researchers included time management sessions and stress reduction techniques for students and empathic statements by faculty. The sample was small and also utilized advanced nursing students in a master program, which is not the typical nursing student. However, the researchers stated that they were only trying to understand the experience of these 12 students and acknowledged that the results were not generalizable.

In a recent study of student nurse depression, the number one reason for feeling overloaded was schoolwork (Dzurec, Allchin & Engler, 2007). Researchers examined the responses of 53 first-year nursing student to an email sent to them that asked, "If you or another student you know has been feeling down or depressed, can you describe a reason?"

Using content analysis and hermeneutics to derive themes, the following explanations for depression emerged: Overload, loneliness, concern about the future, college transition issues, feelings of inadequacy, incidental events. Content analysis was used in this sense to focus on the grammatical content of the email replies and look for evidence of positive statements towards depression. The hermeneutics approach was used to categorize the evidence into themes. While the themes derived in this study complement other studies done about nursing student depression, several problems plague this study. The population sample was not culturally diverse (90% Caucasian), so in a sense, this study can make inferences about white nursing students' experiences, but not nursing students in general. Also, responses through email could be problematic in that participants may censor or provide "safe" answers in fears of confidentiality issues. The article is helpful in that it confirms the "overwhelming" response given by many nursing students in these types of studies. The prospect of completing a nursing training program and moving into employment as a nurse can feel overwhelming. At least some of this stress derives from feeling unprepared and unequipped to conduct the duties of a working nurse.

### **Emotional Adjustment.**

Emotional adjustment to college is another factor often associated with retention and success (Bishop, 1990). Destefano, Mellott and Petersen (2001) compared adaptation to college for students receiving counseling at a college counseling center with a control group of non-counseled students. They found that students who sought out counseling had lower initial scores on adjustment measures. The primary adjustment measure used was the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1989). This 67-item

self-report questionnaire consisted of four subscales. The Academic Adjustment subscale measures educational demands, the Social Adjustment subscale measures interpersonal demands, the Personal Emotional Adjustment subscale measures psychological and physical well-being, and the Attachment to the Institution subscale measures perceptions about the attending institution. Although the attrition rate of the counseling group was 31%, the results indicated that scores on adjustments scales no longer differentiated between those who sought counseling and those who did not.

These findings seemed to indicate that college counseling is effective at helping students be successful. Because counseling has a positive impact on student outcomes, finding ways for professional training programs such as nursing education and college counselors to partner makes sense.

### **Partnerships between College Counselors and Professional Training Programs**

While much research appears to be available on college counseling and its connection to academic and personal success, the literature appears to be sparse on specific partnerships between college counseling centers and academic or professional training programs. The available research clearly points to the need to address the specialized counseling concerns of students in these programs. College counselors and counselor educators need to seek out and develop collaborations with other campus offices and academic programs (Smith, et al., 2007; Kitzrow, 2003).

Coll and Stewart (2002) showed promising results in a collaboration between a counseling and teacher education department. The researchers integrated an early warning counseling intervention into an introductory teacher preparation course. Students who were

struggling academically or missed several classes were targeted for the intervention. Students failing the course had the option of attending counseling or completing a research paper. The goal of counseling was to help facilitate academic and social integration. The analyses of the results indicated that counseling increased confidence to perform the duties of a teacher. Counseling also increased feelings of academic and social integration. In a follow-up, Coll and Stewart (2008) further explored the utility of partnerships between undergraduate professional schools and counseling services. The authors defined the benefits of such collaborations as assisting undergraduate professional schools attract and retain bright and capable students and integrating counseling services in the overall academic mission of the university.

Historically, groups have been difficult to implement and maintain in college counseling centers (Parcover, Dunton, Gehlert & Mitchell, 2006). Abraham, Lepisto and Schultz (1995) surveyed an adolescent sample and found that 100% preferred individual counseling over group. Given these results, attracting college students, most whom are adolescents or young adults, to group counseling appears to be a tough sell. What may be more difficult is engaging students in a specific academic program to consider group counseling as an effective modality. Confidentiality concerns are paramount for students. This concern is heightened when students are on a small campus and grouped together in a specific academic or professional training program (Rockett, 1989).

Kless (1989) described the use of student support groups in nursing programs as a way of reducing stress. A support group was formed and met every two weeks for the duration of a semester. Sessions focused on emotional venting, task difficulty, and

interpersonal relations with instructors. The nursing program director was the facilitator. Student evaluations of the group suggested reduction in personal stress levels. While this outcome is encouraging, faculty facilitation may be counterproductive in running groups because it may make participants unwilling to fully open up. However, there is a growing body of literature that examines interventions that show promise for reducing nursing student stress.

### **Stress Reduction Approaches for Nursing Students**

Godbey and Courage (1994) approached helping nursing students reduce stress by utilizing an individualized stress-management approach. Building on the work of Russler (1991) and Lees and Ellis (1990), the researchers conducted a quasi-experimental longitudinal study measuring the effectiveness of teaching individualized stress-management strategies in a crisis intervention model. Techniques such as nutrition, exercise, progressive relaxation, time management and cognitive control were taught to nursing students. However, the core component of the study involved individually assessing stress levels and coping skills and helping students integrate a few key stress management strategies based on their interest and comfort level with those particular strategies. The results indicated significant increases in self-esteem and decreases in depression and anxiety.

Stark, Manning-Walsh and Vliem, (2005) proposed utilizing self-care interventions with nursing students to decrease stress and burnout. Orem (1991) described self-care as a set of activities focusing on the basic components of nutrition, exercise, and stress management and practiced on a daily basis. Stark et al. (2005) taught a course on self-care activities to full-time junior nursing students to see if it would increase their use of these

types of behaviors. The researchers assisted the students in developing a lifestyle self-care plan (LSCP) to develop concrete daily goals. The results indicated that students who were given a chance to learn these types of self-care activities within their nursing programs were more likely to increase self-care behaviors. In a high stress professional preparation program such as nursing, college counselors can help facilitate student's use of self care activities. These activities can be lifelong skills that will help decrease stress and burn-out in school and future employment.

A psychoeducational approach with didactic information about stress and coping combined with instruction on a relaxation technique showed decreases in anxiety scores of 40 junior-year nursing students. Heaman (1995) conducted a 5-week stress management program with the students and utilized two experimental and two control groups. Along with the stress management education, Heaman (1995) also utilized a relaxation technique called the Quietening Response (QR) which involves awareness of physical changes, deep breathing and muscle relaxation, and positive affirmations. At a 6-month follow up, the results showed students still utilizing QR.

Montes-Berges and Augusto (2007) found the development of Emotional Intelligence (EI) as a valuable skill to reduce negative stress consequences. The authors described EI as the ability to perceive, understand and express emotions and suggested that nursing students who perceived themselves as possessing a more pronounced sense of EI would report higher degrees of coping ability and social support, thus having a more positive sense of mental health. The results of the study indicated that nursing students who reported higher levels of perceived emotional intelligence described having healthy coping skills and mental health.

Some researchers have tested less common methods to help student nurses effectively deal with their stress. Autogenic training (AT), a technique consisting of six exercises aimed at muscular relaxation, showed promise in reducing stress, blood pressure, and pulse rate in 93 nursing students from the United Kingdom. The AT intervention was more effective than a laughter therapy and a no intervention control group. However, there was a high dropout rate in the AT intervention group and the researchers speculated that this was because the AT exercises were time consuming and difficult to incorporate into their busy schedule. Regardless, the researchers saw AT as a viable option for stress reduction in nursing students (Kanji, White & Ernst, 2006).

### **Multicultural Considerations for Nursing Students**

Most of the interventions and research conducted to understand the stressors of nursing students have not taken into consideration the cultural components that may make successful completion of a nursing program more difficult. Amaro et al. (1996) examined the barriers that ethnically diverse nursing students perceived to be significant in their ability to complete their nursing program. Seventeen recently graduated ethnic minority nursing students were interviewed using an open-ended questionnaire. Ground methodology was used for the data analysis. Collected data were examined for trends and themes using constant comparison. Results showed that Amaro et al.'s (1996) earlier findings of student barriers were confirmed. This included personal needs, such as finances, academic needs such as study skills, language needs, and cultural needs. In addition, the new data identified ways of coping with the barriers. These included self-motivation and determination, the importance of teachers, peer support, and ethnic nursing student associations.

This study is a valuable contribution to the understanding of barriers perceived by ethnic minority nursing students. Overall, the nursing shortage across the country is devastating to meeting the demand of health care needs. Worse yet are the rates of matching the diversity of the healthcare workforce with the diversity of its patients. Amaro, et al. (2006) focuses on solutions for nursing programs to support ethnic minority nursing students.

One objective of this review was to consider the cultural context of being a nurse or nursing student and how these cultural considerations can be used as a strength in areas such as emotional well-being and career longevity. Additionally, The University of North Carolina at Pembroke (UNCP), where study participants were recruited, is a historically Native American university with 16.8% of the student population reporting identification with that racial group (UNCP 2009/10 Fact Book). Thirty percent of the graduating students in the 2008-09 UNCP nursing program were Native American (UNCP 2009/10 Fact Book). In fact, one of the five participants in this study identified as Native American. It is important for consideration to be given to Native American nursing student identity and the compatibility with MBCT concepts.

### **Multicultural Integration of MBCT, Native American Identity and Nursing**

It is well documented that retention and graduation rates for Native American college students are dismissal. Native Americans are the least likely to enroll and persist to graduation at a four-year institution, with attrition rates as high as 75% to 93% (Larimore & McClellan, 2005). In 2002, Native Americans comprised less than 1% of all students enrolled in college (Guillory & Wolverton, 2008). For Native American students who are interested in entering into a nursing program, the numbers are even more discouraging.

Native Americans represent the lowest number of students in nursing programs of all minority groups, including men (Dickerson, Neary, & Hyche-Johnson, 2000). In 2005, only 1000 Native American students were in professional degree programs (Lowe, 2005). As of 2007, only 14 Native Americans in the country had a doctorate in nursing, and professionally, less than 1% of all working nurses were of Native American heritage (Moss, 2007).

Native Americans nurses and nursing students have been documented to have a significantly different worldview than other nurses (Lowe & Struthers, 2001, Dickerson & Neary, 1999). Struthers & Littlejohn (1999) posit that Native American nurses experiences the tasks and science of nursing through a different conceptual lens. Many beliefs and values are present in the dominant and western view of healthcare. Emphasis on individualism, future time orientation, science and technology to cure body-based illnesses, and competition are all defining components in the medical model. In contrast, Native American healing beliefs include present time orientation, cooperation, family and community focused participation in the nursing process, as well reliance on holistic healing practices (Lipson, Dibble, & Minarik, 1996).

Lowe & Struthers (2001) conceived a conceptual framework of nursing in the Native American culture that consisted of seven dimensions. These seven themes were identified through interviews with several hundred Native American nurses to extrapolate core values practiced in nursing in the Native American culture. These values could be said to define the identity of Native American nurses. *Caring* is the first dimension and speaks to a partnership in the healing process. The *Traditions* dimension utilizes indigenous and conventional

medicines. *Respect* and *Connection* dimensions describe the relationship between the nurse and patient as interwoven like a quilt. *Holism* is the practice of inclusion of all pieces of the person. Trust is the sixth dimension and is a deepening of the relationship. Finally, Spirituality encompasses all of the above components and looks at the ability of Native American nurses to transcend conventional boundaries.

The preparation for nursing in nursing schools is often based on western worldviews and the medical model. Native American nursing students struggle in this paradigm and often drop out or fail these programs. College counselors working with Native American nursing students need to examine their singular approach and incorporate more culturally sensitive counseling methods. Understanding traditional nursing school practices will also help counselors empathize with culturally diverse nursing students. A traditional nursing education practice is for student to learn by trial-and-error while performing clinical tasks in front of peers. Native American students react negatively to failing in front of peers, and prefer learn while watching and asking questions (Rhodes, 1988). Successful education of Native American nursing students will involve a partnership of two cultures (Dickerson et al., 2000).

MBCT, and more broadly, all mindfulness-based approaches, would at first glance appeared well-suited for multicultural use. For the most part, it is. Germer (2005) suggests that suffering is universal, as is the desire to be free of it. However, mindfulness-based therapy has been slow to gain credibility in western cultures (Baer, 2003). It has found acceptance in cultures that embrace holistic healing practices such as Native Americans

(Barker & Giles, 2003). Because of this, MBCT might be an inroad to increasing the use of counseling services by diverse cultures.

### **Mindfulness-Based Cognitive Therapy**

MBCT has been described as part of a third generation of cognitive therapies (Harrington & Pickles, 2009). Along with Dialectical Behavioral Therapy (DBT) and others like it, MBCT has integrated the construct of mindfulness with standard cognitive-behavioral paradigms. MBCT found its origins in the work of Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction (MBSR) program. This eight-week group-based program consisted of Buddhist mindfulness meditation practices to help chronic pain sufferers reduce their stress associated with illness. MBCT has incorporated elements of MBSR and cognitive-behavioral therapy to help individuals become more aware of thoughts and feelings and put them into context as mental occurrences rather aspects of self (Teasdale et al., 2000).

Kabat-Zinn began his work in MBSR in 1979, although it was later that he truly structured the program (Chang et al., 2004). MBSR consists of teaching a core group of skills that lead to mindfulness. The skills taught consist of sitting meditation, body scan meditation, and mindful yoga. These skills are typically taught in group formats, in eight-week periods. MBSR requires the participant to practice the skills extensively throughout the week when not in session (Germer, 2005).

A growing body of qualitative research is developing surrounding mindfulness-based interventions. Schure, Christopher, & Christopher (2008) attempted to bring new insight to how a MBSR-based program can help reduce stress and increase self-care in counseling students. The three skills taught were hatha yoga, sitting meditation, and qigong. The

research questions included: What were students' perceptions of the influence of mindfulness practices on their own lives and the lives of their clients? Which of the three mindfulness practices did students find most influential? How will students integrate mindfulness practices into their own career? Participants in this study were 1<sup>st</sup> and 2<sup>nd</sup> year graduate students in a counseling program that had enrolled in a course related to mind/body interventions. Ages of participants ranged from early 20s to mid 50s. The total amount of participants whose data were used in the final analysis was 33. Data collection for this study spanned over a four-year period of this course. The course was loosely based on MBSR and contained three major components: Hatha yoga, sitting meditation, and qigong (Chinese form of movement and meditation). Personal journal reflections and research review were also part of the course. Twice a week for 75-minutes, participants were trained in these areas. They were asked to practice outside of class four times weekly for 45 minutes.

As a final journal assignment, participants were asked to respond to four questions in writing: 1) How has your life changed over the course of this semester in ways that might be related to this class? 2) Of all the practices learned in class, which one are you drawn to the most and why? How has it affected you? 3) How, if at all, has this course affected your work with clients, both in terms of being in the room and thinking about treatment? 4) How do you see yourself integrating, if at all, any of the practices from class into your clinical practice (or career plans)? There were no guidelines for how long the answers should be and participants submitted them in print and electronically.

Using NVivo, a software program, responses to the four questions were analyzed. Using cross-case analysis, the data was coded and analyzed inductively. Themes were teased

out and reported and an independent researcher was given a random 10% of the data to code as a check for validation.

Themes related to how life has changed over the course included physical and emotional changes, spiritual awareness, and interpersonal changes. Yoga increased awareness of body and meditation increased awareness of emotional issues. Qigong increased centeredness. Participants also believed that the course had helped them be more attentive in the therapy process and would teach the techniques to their clients.

Another qualitative view of the nursing student stress experience came from a case study conducted by Hamill (1995). Particularly, the researcher was interested in the way that nursing students perceived the stressful events in their training program. The study was conducted at a college of nursing in Northern Ireland. The author sent out postal questionnaires to 35 of the students in the program. The response rate for the questionnaires was 52%. Using the responses, the researcher developed a semi-structured interview guide. Ten students were chosen randomly to be interviewed. These interviews lasted approximately 45 minutes to an hour.

Two themes emerged, followed by a core variable. Themes included college-based stressors such as academic assignments and inconsistent advising. Clinical stressors were identified as lack of practical skills and negative attitudes of the clinical staff who conducted student supervision. The core variable, which grounded theory suggests may best explain the research problem, was identified in this study as a continuum of dependence/independence. This ultimately was defined as the student's struggle to find their independence as practicing nursing students while having to be dependent on a variety of personnel to accomplish this.

Many of the limitations of this study were acknowledged by the researcher. The guided interviews were often leading, and this was a problem of inexperience in conducting these types of interviews. Generalizability may be a problem as this was small sample from Northern Ireland. However, generalizability is not a goal of a lot of qualitative research.

Because mindfulness is rooted in Buddhist philosophy and belief, it's inclusion in western counseling paradigms has been slow. Most interventions and models consisting of mindfulness-based ideas have been stripped of the eastern religious and philosophical foundations and presented as skill-based acquisitions (Baer, 2003). This has increased acceptance of mindfulness-based approaches' in mainstream treatment and educational venues.

Much of the empirical research utilizing mindfulness as a construct fails to support the idea that mindfulness is the factor prompting change in the dependent variables. It is a significant gap in the literature. Collard, Avny, & Boniwell (2008) contributed evidence that mindfulness is the influencing factor in MBCT. In addition, the research question for this study was: Would a MBCT program increase participants' levels of Mindfulness and Satisfaction with Life and decrease participants' level of Negative Affect? Four hypotheses were offered. The first hypothesis was that participants' level of mindfulness would increase after the MBCT program. The second hypothesis was that Satisfaction with Life would increase after the program. The third hypothesis was that participants' level of Negative affect would decrease and level of positive affect would stay the same after the program. Finally, the last hypothesis stated that longer weekly practice time of mindfulness would be associated with higher levels of mindfulness at the end of the program.

This study utilized a repeated measures within participants design. Time of measurement was the only independent variable (IV). The two levels of the IV were measurement on the first session of the MBCT course and measurement on the last session. The four dependent variables (DV) measured were Mindfulness, Satisfaction with Life, Positive Affect, and Negative Affect. Participants were students enrolled in degree program in Integrative Counseling and Psychotherapy. This was a graduate program in a public university in East London. Participants were between the ages of 24 to 56. Also, all participants had a previous course in cognitive-behavioral theory. This study has multiple threats to internal validity. Random assignment and a control group were not used. The researchers utilized a convenience sample consisting of the already intact class. Because of this, the strength of the causal relationships between mindfulness and lower distress is suspect. However, it does show promise for future research, such as this study, that suggest mindfulness as a skill for lowering distressing emotions.

The course, entitled “MBCT for Depression” was an eight-week class and participants received academic credit for completion. On the first week, the participants were given all of the DV measures and completed them. The first data collection yielded 20 participants (16 women and 4 men). Measures used were the Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006), Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). On the last session of the eight week course a final data collection occurred and 13 participants provided data (11 women and 2 men).

Dependent t-tests were used for analysis of the data. Changes in mindfulness, positive and negative affect, and satisfaction with life were measured. Results indicated mindfulness levels significantly increased. Additionally, there were no changes in positive affect, but significant decreases in negative affect were found. Satisfaction with life data showed promise, but not at significant levels. Ancillary findings included the correlation between longer practice times of mindfulness and higher levels of mindfulness.

Based on the results, this study suggests that mindfulness is the influencing factor in MBCT and that higher levels of mindfulness means less negative affect. Subsequently, longer practice times of mindfulness are associated with higher levels of mindfulness.

Teasdale et al. (2000) compared depressed patients given MBCT interventions with treatment as usual groups (TAU). All patients had taken medication and experienced a remission of their depression, but stopped taking the medicine 12 weeks before the intervention began. Relapse rates were much lower for those participants in the MBCT group than the TAU group. However, this was only true for participants who had experienced multiple (more than three) relapses in the past. Ma & Teasdale (2004) replicated the above conditions and found MBCT to be successful in reducing depressive relapse in patients with multiple previous relapses from 78% to 36%. It appears that MBCT is effective for patients who have experienced frequent relapses of their depression.

Aside from MBCT, many other therapy approaches utilizing mindfulness as its core have found attention in the past decade. Dialectical Behavioral Therapy (DBT; Linehan, 1993) asks clients to accept themselves as they are while working to change undesirable

behaviors. To facilitate this synthesis of acceptance and change, mindfulness skills are taught in a group format, and enhanced in concurrent individual therapy.

Acceptance and Commitment Therapy (ACT; Hayes, Strossahl, & Wilson, 1999) does not use the terminology of a mindfulness-based approach, but shares its intent. The goal of this approach is to teach clients to acknowledge thoughts and feelings non-judgmentally and accept them. ACT also teaches clients to work specifically to change behaviors that are not functional in the context of their lives.

The core intervention of these therapy approaches is mindfulness meditation. Meditation has many forms, but is ultimately the practiced skill of quieting the mind (Wright, 2007). The most traditional and common usage is a breathing meditation. In this form, the participant would assume a comfortable position and begin a focused concentration on the inward and outward breath. When the mind becomes distracted, the participant is to notice where the mind goes, but to work to bring the focus back to the breath. The breath acts as a beacon of a present event (Germer, 2005). A version of this meditation is the Three-Minute Breathing Space (Segal, Williams, & Teasdale, 2002). This meditation approach is a core skill learned in MBCT. It utilizes the breathing techniques of meditation while attempting to bring awareness to present experience, focusing on breath as a mediator, and expanding to other bodily sensations.

Empirical evidence for efficacy of mindfulness-based approaches is still limited, but shows promising possibilities. However, some say that promising results in outcome studies are not enough. Multiple critiques of MBCT and the inclusion of mindfulness-based concepts into cognitive therapy are emerging.

## **Critiques of Mindfulness-Based Approaches**

Purists of Cognitive-Behavioral Therapy (CBT) have argued that the inclusion of mindfulness concepts into cognitive theory is a marriage of two ideas fundamentally at odds (Harrington & Pickles, 2009; Solly, 2005). While acknowledging some value of the techniques, such as meditation, of mindfulness-based therapy approaches, these CBT proponents suggest that the concept of mindfulness is impossible to operationalize, difficult to measure, and seeks to explain the relationship of thought and feelings in a mystical and irrational way.

Harrington & Pickles (2009) offered numerous inconsistencies in incorporating mindfulness into a CBT paradigm. First, the theoretical nature of how thoughts influence beliefs and behavior is different. According to CBT, it is the content of the thoughts that influence the resulting thoughts and behavior. The key to managing distressing thoughts is to explore cognitive alternatives or place perspective on the meaning of the cognitions. This is in direct contrast to the mindfulness-based approach of MBCT to simply change the awareness of and the relationship to the thought. Mindfulness approaches asks the participant to simply acknowledge the thought non-judgmentally, while CBT seeks to reframe the thought until distress is lessened.

Another critique from Harrington & Pickles (2009) is the reliance of mindfulness-based approaches on mystical and religious philosophy while attempting to appear secular. While CBT is a practical and rational approach to cognitive restructuring, MBCT and others like it, are based on ideas steeped in Buddhist philosophy that emphasizes transcendence of worldly problems. However, the ever increasing inclusion of mindfulness constructs into

established and scientific psychological theory purports it to have withstood the empirical and theoretical standards met by traditional CBT models. It is an inadequate measure of a therapy model to just rely on outcome research. There must be defined and rational principles that make up a systematic theory.

Hayes and Wilson (2003) posit that mindfulness is at best a prescientific concept. The literature is inconsistent as to an operational definition of mindfulness despite Bishop et al.'s (2004) attempt to gather a consensus. Ultimately, the various meanings attached to the term mindfulness have devalued its validity as a defined scientific construct. Considering that the theoretical basis of MBCT relies on mindfulness being a defined and measurable variable, more research is needed.

### **MBCT and Emotion and Cognition**

MBCT has a unique perspective in the nature of and the relationship with emotions and the role of cognition. The approach can offer counselors tools to help nursing students reduce stress. The context in which that occurs can be viewed in past, present, and future orientations.

#### **Past.**

MBCT attempts to help individuals divert focus from past events to present moment. The goal is to reduce ruminations and dwellings of previous experience. Research findings on how stress in nursing programs leads to distress and anger suggested common past experience among the participants (Thomas, 2003). Students who perceived nursing faculty as historically unfair, rigid, or discriminatory, often developed anger and disappointment with their nursing program. Other sources of anger and stress included unresolved personal

and family issues. Unresolved family issues such as strained and unhealthy relationships with parents or spouses can lead students to having feelings of transference toward faculty members who may be critical of their performance (Shirley, 2007). MBCT does not attempt to change these kinds of cognitions or perceptions of history, only to be aware of them and accept them non-judgmentally.

**Present.**

MBCT assumes that the greatest opportunity for increasing happiness and well-being is in the present. Musicians, artists, and scientists have expressed experiencing a connection that transcends positive or negative emotions when engaged in an activity that taps into their talent and strength. MBCT, and advocates of mindfulness, also seek that space when engaged in meditation. It is meant to reduce self-absorption. Certainly, mindfulness-based philosophies and models, including MBCT, have the reduction of selfishness and the increase in service to others at its core. MBCT practitioners state that stress can be reduced by staying in the moment, and reactions to the environment controlled using mindfulness.

**Future.**

Again, MBCT does not seek to restructure thoughts to change emotion. As with all mindfulness activities, the goal is to acknowledge all thoughts whether they are negative or positive and simply be aware of them non-judgmentally. As fear and anxiety-inducing thoughts of the future arise, the goal is to bring awareness back to the present moment. This is usually accomplished by meditation and breathing exercises (Germer, 2005).

## **Conclusion**

Although much research exists about stress and college students in general, little focus has been placed on stress and students in professional training programs. Nursing students in particular appear to experience stress at higher levels than other health professions (Beddoe & Murphy, 2004). While it appears that nursing educators have concern about this issue, the response from college counselors has been limited. This is problematic in that nursing educators may not have the time, resources, or expertise to provide effective interventions to students dealing with stress-related academic and emotional issues. College counselors need to develop relationships with professional training programs such as nursing, to offer interventions that target the specific stressors and realities of being a student in those particular programs. Just as we consider variables such as race, gender, and sexual orientation in understanding the multidimensional complexities of our clients, sensitivity to the reasons for vocational choice and the consequences of that choice should also be considered.

The rigors of a nursing program can lead to significant attrition rates (Moore, 1996). Assisting the transition from professional student to working nurse will need to involve an organized program of academic, social and emotional support. Researchers have addressed this issue using psycho-educational, mind/body, and self-care techniques among others (Heaman, 1995; Beddoe & Murphy, 2004; Stark, Manning-Walsh and Vliem, 2005). Although these approaches have shown some promise, how to integrate them into the fabric of the university's support systems have not been determined. In spite of the fact that research on college counseling services has shown improved retention (Wilson, Mason and

Ewing, 1997), academic success (Wlazelek & Coulter, 1999), and improved emotional adjustment (Destefano, Mellott and Peterson, 2001), nowhere in the literature was the importance of developing partnerships between college counseling centers and professional training programs discussed.

One therapeutic approach that shows promise for reducing stress is MBCT. Despite its emerging status, MBCT offers valuable contributions to the fields of counseling and psychology. Specifically, MBCT, and other similar models, operationalize the key construct of mindfulness and place it within a cognitive-behavioral theoretical framework. Some critics suggest that these two concepts are incompatible. However, instead of being polarizing themes, it's only the relationship to thoughts that make them different. It is this difference that gives MBCT its own designation, while not quite a substantiated theory, certainly a therapeutic and theoretical model.

Utilizing MBCT in an individual session format with nursing students to reduce their self-reported perceived stress levels and increase self-reported levels of mindfulness were the goals of this study. This study added to the research base as studies utilizing these specific variables were not available in the literature. It may also provide college counselors with a practical framework with which to work with this specific population.

Chapter Three of this dissertation included a detailed description of the research design and methodology used to conduct this study. A description of the population and the sample selection procedures was provided. The procedures for data collection, intervention and instrumentation were discussed. Finally, the data analysis methods were described.

## CHAPTER 3

### METHOD

#### **Single-Subject Designs**

Single-subject designs have a long history in psychological and counseling research (Heppner et al., 2008). Barlow & Hersen's (1984) exposition on the chronology of single-subject design reveals psychology's early research development steeped in the use of this type of experiment. Currently, the use of single-subject designs is much more limited, and group experimental designs with statistical analysis have become the norm (Lundervold & Belwood, 2000). Additionally, single-subject designs are often viewed as wrought with validity and reliability issues, and some academics may feel this approach does not demonstrate an adequate level of scholarship (Jones, 2003). Specifically, external validity is an issue with single-subject designs. Because this type of design provides data on only one case, it is hard to make generalizations about other cases. However, external validity can be enhanced by replicating the design multiple times, thus strengthening possibilities for generalizations (Heppner et al., 2008). Lundervold & Belwood (2000) called single-subject experimental designs "the best kept secret in counseling." This design can provide counselors with scientific methods of research that produce practical and useful clinical information that can be applied to the practice setting.

There several advantages in the use of single-subject experimental designs. It allows for narrowing down causes of behavior change and determining which treatment approaches work most effectively. Group designs can often obscure change in individuals thereby not allowing flexibility in modifying treatment protocols to isolate examples of cause and effect

(Barlow & Hersen, 1984). Another advantage of single-subject experimental designs is that by collecting data using a baseline and intervention phase, a subject acts as his or her own control group, thereby increasing internal validity (Foster, Watson, Meeks, & Young, 2002). Specifically, this study utilized a single-subject experimental AB design. AB design is the most basic of the single-case designs, but allows for a great deal of clinical utility.

### **AB Designs.**

The AB design is a two phase process of data collection and intervention. The “A” phase is referred to as the baseline period. During this period, the researcher is interested in assessing and measuring the dependent variables and establishing an appraisal of the participant. During this period, the researcher can gather several important information points that can provide direction for the study. One, baseline measurements can help determine targets of change. Also, the baseline phase will give an overview of the severity of participant issues, as well as providing a platform for developing rapport before beginning the intervention phase (Lundervold & Belwood, 2000). Barlow & Hersen (1984) suggest at least performing three observations to establish a stable baseline.

The “B” phase is referred to as the intervention phase. During this phase the researcher introduces the independent variable, usually the introduction of some type of treatment or technique. Multiple measurements of the dependent variable over time occur to determine any change in the target behavior. It is the comparison of the two phases that allows for interpretation of whether the intervention was the cause of the change. Critics of AB designs suggest that problems related to maturation and history pose serious threats to internal validity. Additionally, the common data analysis technique used in interpreting AB

designs is visual analysis. This method is subjective and suffers from a lack of standardization (Heppner et al., 2008). However, despite these shortcomings, AB designs allow for a significant, practical, and useful look at real world counseling approaches and techniques. Data gathered from this type of design can inform practice and provide direction in validating new therapy models like MBCT.

### **Participants**

Participants for this study were all senior-level students enrolled in a Bachelor of Science in Nursing (BSN) program at a small rural southeastern university. Four of the participants were female, and one was male. Participant ages ranged from 21-30 years old. The mean age of the participants was 25.6 years old. Three of the participants were Caucasian, one was Hispanic American, and one was Native American.

The BSN Program is organized into two separate stages. The lower division Prelicensure BSN Program is comprised of freshman and sophomore students taking prerequisite and core classes. Successful completion of these classes is required to move into the upper division Prelicensure BSN Program. The upper division Prelicensure BSN Program requires junior and senior students to complete two years of nursing major courses and clinical work. Successful completion of these final two years leads to graduation.

The sample for this population was recruited from students enrolled in the upper division Prelicensure BSN Program as these students are fully engaged in all of the activities and requirements of nursing students, to include upper level course work in nursing and clinical work at local hospitals, to developing the basic and advanced skills of nursing. Recruitment involved the researcher presenting the study and requirements for participant

participation for ten minutes at a class for senior nursing students and sending an email (see Appendix E) to all junior and senior students regarding participation in the study. An in-class presentation to the junior class was not able to be scheduled during the recruitment time frame for this study. The email was forwarded to all of the junior and senior nursing students by a nursing department faculty member who coordinates the professional and personal development workshops for nursing students. No exclusion criteria were used to select participants other than their status as an upper division Prelicensure BSN student. Any student who self-selected for the study was eligible. The target recruitment number for this study was four participants. The recruitment phase yielded five participants who volunteered.

### **Research Design**

A MBCT intervention modified for length and modality was utilized in six individual sessions with nursing students in an effort to reduce their self-report of stress and increase their self-report of obtainment of mindfulness. The research design was five AB single-subject experimental designs with repeated measures. The research questions for this study are as follows: (1) Does using MBCT in individual sessions increase the self-reported level of mindfulness for a nursing student? (2) Does using MBCT in individual sessions decrease self-reported levels of stress for nursing a student? The hypotheses for the study are as follows: (1) Utilizing MBCT in individual sessions will increase the participant's level of self-reported mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). (2) Utilizing MBCT in individual sessions will decrease the participant's level of self-reported stress as measured by the Perceived Stress Scale (PSS;

Cohen & Williamson, 1988). The goal for these hypotheses was to either accept or reject the null hypothesis that MBCT utilized in individual counseling will not decrease stress and increase mindfulness in nursing students.

### **Data Collection**

Consistent with the AB single-subject experimental design, this study consisted of two phases: Baseline and intervention. The baseline phase (A) consisted of four meetings with each participant to administer the dependent measures. The researcher scheduled the meetings strategically to obtain measurements that would include a balance between school and home experiences. One of the baseline measurements occurred during the final exam week of the fall semester and two baseline measurements were collected during the week of Christmas, and the final baseline measurement was collected on the last Friday before the spring semester classes began. In total, four baseline measurements were collected over five-weeks. A more detailed description of the baseline phase is offered in the Procedures section.

The intervention phase (B) consisted of six one-hour sessions scheduled over five-and-a-half weeks. Session one occurred in the first week of classes of the spring semester and each subsequent week consisted of sessions two through five. The final session, a wrap-up and review session occurred at the beginning of week six. Each session consisted of 50-minutes focusing on MBCT skills, concepts, and homework assignments, and 10-minutes at the end of the session to administer the dependent measures. A detailed description of the intervention is included in this chapter.

## **Procedure**

The sample for this population was recruited from students enrolled in the upper division Prelicensure BSN Program as these students are fully engaged in all of the activities and requirements of nursing students, to include upper level course work in nursing and clinical work at local hospitals to developing the basic and advanced skills of nursing. Recruitment involved the researcher presenting the study and requirements for participant participation for ten minutes at a class for senior nursing students and sending an email to all junior and senior students regarding participation in the study. The email was forwarded to all of the junior and senior nursing students by a nursing department faculty member who coordinates the professional and personal development workshops for nursing students. Five nursing students volunteered for participation in the study by responding to the email sent by the researcher. All five students were selected to participate based on their status in the program (seniors). One junior nursing student initially volunteered by email, but never responded to attempts to schedule an orientation meeting.

Participants volunteering for the study were scheduled individually for an appointment time to meet with the researcher to complete a study orientation and start baseline measurements. These meetings were scheduled in the middle of final exam week of the Fall semester. This 30-minute orientation meeting consisted of an introduction to the study and the researcher, brief background of the participant, a definition of mindfulness, and explanation and completion of the informed consent paperwork, and completion of a short participant demographic form (see Appendix D). Additionally, the first baseline dependent measurements were collected at the end of this meeting, and the final three baseline measurements were scheduled. Each

baseline meeting consisted of an informal check in that assessed academic and personal stress levels. The second baseline measurements were collected at the beginning of the week of Christmas and the third baseline measurements were collected at end of that week. The final baseline measurements were collected on the last Friday of the winter break. On the last three baseline measurement meetings, an informal check-in was conducted and dependent measured completed. In total, four baseline measurements were collected over five-weeks.

The intervention phase (B) consisted of six one-hour sessions scheduled over five-and-a-half weeks. Session One began on the first week of classes of the spring semester and each subsequent week consisted of sessions two through five. The final session, a wrap-up and review session was scheduled at the beginning of week six. Each session consisted 50-minutes focusing on MBCT skills, concepts, and homework assignments, and 10-minutes at the end of the session to administer the dependent measures. A detailed description of the intervention content and schedule are listed below.

At the final session, the researcher explained procedures and options for counseling if the participant desired to continue to explore MBCT or other issues that may have come up during the study period. Additionally, mindfulness resources such as book and website lists were given to all participants to continue learning and practicing mindfulness exercises.

### **MBCT Intervention**

Designed as an eight-week program with specific guidelines for each session, MBCT was originally conceived as a class-driven modality. Clients are placed in classes to learn the mindfulness and cognitive-behavioral (Beck, Rush, Shaw, & Emery, 1979) skills needed to

regulate emotions and thoughts. The MBCT intervention for this study is a modified version of the MBCT format utilizing individual sessions instead of group. As noted earlier, Kuyken et al. (2008) found that 5% of eligible sample for their MBCT study declined participation because they did not like the group aspect of the intervention. Lau & Yu (2009) suggests that offering mindfulness-based treatments in an individual format might increase participation for those who are reluctant to be involved in group settings for whatever reason. Nursing students, especially those enrolled in the same program, may be in this category due to potential boundary conflicts that come with dual memberships in both therapy and an academic program.

Additionally, while MBCT traditionally is an eight-week intervention, the session content for this study was combined to six sessions, and session lengths were reduced to an hour versus a typical two-hour class to accommodate the multiple demands of nursing student schedules. Also, MBCT was originally used to treat clients with chronic relapsing depressive disorders, while stress is the target symptom in this study. Due to this, some of the exercises and homework assignments would not be relevant to nursing students who may not have depression and were left out of the intervention. Another modification included the use of pre-recorded guided meditations for body scans and breathing instead of researcher-led meditations. During sections of the intervention when a meditation was introduced and practiced, the researcher started a pre-recorded meditation and left the room while the participant experienced the meditation. Typically, MBCT is offered in large classes where everyone engages in the meditations as a group. This reduces the self-consciousness of practice in front of the instructor. In a one-on-one session, participants may have felt self-

conscious while engaged in practice with only one other person in the room. Having participants practice meditations in an empty room with a guided recording may allow for more engagement in the exercise. However, the modified intervention still utilizes the core MBCT exercises and philosophy. Included is a detailed description of the major techniques used and what modifications were made to accommodate the study goals. Also included is an outline of what is used and in what order for each session. The modified structure and content used is unique to this study, however the specific components, homework, and exercises are taken from Segal et al.(2002).

### **MBCT Techniques & Exercises Used in the Study**

- (1) *Raisin Exercise* – Used as an introduction to mindfulness, this exercise asks the participants to take a raisin offered by the researcher and examine all aspects of its shape, texture, and external characteristics. The researcher guides the participant through this experience utilizing a transcript available in Segal et al. (2002). The participants are then asked to place the raisin in the mouth, but not bite it. The end of the exercise involves participants chewing the raisin, swallowing and following it mentally all the way down to the stomach. The exercise takes about 15 minutes and challenges the participants to experience a routine experience in a new way. Open-ended questions are asked to the participants to help them explore their experience.
- (2) *Body Scan Meditation* – The body scan meditation brings a detailed awareness and focus to specific areas of the body. Unlike other body scans that may try and manipulate specific body conditions (i.e., progressive muscle relaxation), in MBCT,

body scans simply serve to bring awareness to what is going on in the body without the need to make any changes. A modification in this study included using a shorter recorded body scan meditation (8 minutes) (Maddux, 2006) to accommodate not only session constraints, but also the hectic academic schedule of nursing students.

Students were asked to complete the body scan meditation every day for the first two weeks of the intervention.

- (3) *Be Mindful During a Routine Activity* – Participants were asked to choose a routine activity (i.e., brushing teeth, vacuuming, washing dishes) and to experience it in the same way they experienced the raisin exercise.
- (4) *Homework Record Forms* – Used in all sessions, the Homework Record Forms allowed participants to document the frequency of practice of mindfulness activities and also provided a section for comments about feelings, thoughts, or behaviors that were experienced while engaged in the activities. The forms were taken directly from Segal et al. (2002).
- (5) *Thoughts and Feelings Exercise (Professor Sends an Email)* – In this exercise, the researcher presents a scenario to the participant where they receive an email from a challenging professor with only the line “I need to see you in my office tomorrow ASAP!” Participants are asked to explore their thoughts and feelings surrounding this and the researcher help participants see how thoughts, feelings and behaviors are connected.
- (6) *Pleasant and Unpleasant Events Calendars* – Participants are given forms (Segal et al. (2002) that help them identify one pleasant event per day in week two and one

- unpleasant event per day in week three. The form requires participants to identify how they thought, felt, and physically reacted to each event. This exercise helps participants understand the need to accept pleasant and unpleasant events equally and without judgment.
- (7) *Breathing Meditation* - The breathing meditation brings a detailed awareness and focus to the breath. A modification in this study included using a shorter recorded breathing meditation (9 minutes) (Maddux, 2006) to accommodate not only session constraints, but also the hectic academic schedule of nursing students. Students were asked to complete the breathing meditation every day for the second and third weeks of the intervention.
- (8) *Five-Minute Hearing Exercise* – Participants are asked to sit for five minutes with eyes closed and center all of their focus on hearing. When intrusive thoughts enter, participants are instructed to acknowledge them, but then focus back on just hearing. After exercise, participants are asked to explain what they heard and any experiences of obstacles to hearing.
- (9) *3-Minute Breathing Space* – A core skill in MBCT, the 3-Minute Breathing Space acts as a mindfulness “time out” and involves taking one minute to assess one’s immediate physical, emotional, and cognitive situation, using the next minute to center with a breath focus, and then allowing the centering to enter into all parts of the body.
- (10) *20-Minute Sitting Meditation* – This meditation is a combination of all of the skills that the participants have learned including the body scan and breathing meditations

and the hearing exercise. Participants practice this meditation without the use of pre-recorded material and use the breath as a focus and sit for 20 minutes. Participants are instructed that if an intrusive thought or event occurs to acknowledge it and return the focus back to the breath.

(11) *Moods, Thoughts, and Alternative Viewpoints Discussion* – This involves a short overview of how thoughts can influence mood, and techniques and suggestions to view intrusive thoughts in a different way. Researcher used handouts titled *Ways You Can See Your Thoughts Differently & When You Become Aware of Negative Thoughts*, available in Segal et al. (2002).

### **Schedule & Order of Session Content**

#### *Session One:*

Theme: Using Mindfulness to Break Out of Automatic Pilot

Agenda:

- Orientation to mindfulness and MBCT
- Raisin Exercise
- Feedback and discussion of Raisin Exercise
- Body Scan introduction and practice
- Feedback and discussion of Body Scan
- Assign Homework: Use Body Scan Tape 6 times before next session, Be mindful during a routine activity
- Provide handouts: Definition of Mindfulness, Summary of Session 1: Automatic Pilot, Homework Record Forms (Segal et al., 2002).
- Administer PSS & MAAS

#### *Session Two:*

Theme: Focus on the Body Enhances Clarity of the Mind

Agenda:

- Body Scan Practice and Review
- Homework review
- Thoughts and Feelings Exercise (Professor Sends an Email)
- Pleasant Events Calendar assignment
- 10 -minute Breathing Meditation introduction and practice

- Assign Homework: Use Body Scan Tape 6 times before next session, Use Breathing Meditation Tape 6 times before next session. Complete Pleasant Events Calendar once a day.
- Provide handouts: Tips for Body Scan, Summary of Session 2, Homework Record Forms, Mindfulness of the Breath, The Breath, Pleasant Events Calendar
- Administer PSS & MAAS

*Session Three:*

Theme: Mindfulness of the Breath

Agenda:

- Five-Minute Hearing Exercise
- 10 Minute Breathing Meditation practice and review
- Homework review
- Unpleasant Events Calendar assignment
- 3-Minute Breathing Space Explanation
- Assign Homework: Use Breathing Meditation Tape 6-times before next session, Unpleasant Calendar (Daily) completed once a day, 3-Minute Breathing Space 3-times a day.
- Provide handouts: 3-Minute Breathing Space Instructions, Summary of Session 3, Homework Record Forms, Mindfulness of the Breath, Unpleasant Events Calendar
- Administer PSS & MAAS

*Session Four:*

Theme: Acceptance

Agenda:

- Five-Minute Hearing Exercise
- 10 Minute Breathing Meditation practice and review
- Body Scan Meditation practice and review
- Homework review
- 20 Minute Sitting Meditation introduction and practice
- Assign Homework: 20-minute Sitting Meditation 6-times before next session, 3-Minute Breathing Space 3-times a day and as needed.
- Provide handouts: Sitting Meditation Extended Instructions, Summary of Session 4, Homework Record Forms
- Administer PSS & MAAS

*Session Five:*

Theme: Thoughts are Not Facts

Agenda:

- 20 Minute Sitting Meditation practice and review
- Homework review
- Moods, Thoughts, and Alternative Viewpoints discussion

- 3-Minute Breathing Space
- Start Preparation for Last Session
- Assign Homework: 30-minute breathing meditation(3 times a week) 3-Minute Breathing Space (3 times a day)
- Provide handouts: Ways You Can See Your Thoughts Differently, When You Become Aware of Negative Thoughts, Summary of Session 5, Homework Record Forms
- Administer PSS & MAAS

*Session Six:*

Theme: Putting It All Together

Agenda:

- Body Scan practice and review
- Breathing Meditation practice and review
- Sitting Meditation practice and review (10 minutes)
- Homework Review
- Review of All Techniques Used in Study
- Daily Mindfulness handout
- Mindfulness Resources handout
- Provide handouts: Summary of Session 6, Daily Mindfulness, Mindfulness Resources
- Administer PSS & MAAS

**Instrumentation**

The two dependent measurements for this study are the 10-item version of the Perceived Stress Scale (PSS; Cohen & Williamson, 1988) and the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). The instruments were chosen because of their specific measurement of self-reported or perceived stress, and the core characteristics of mindfulness. Additionally, both instruments have been used to measure weekly changes in stress and acquisition of mindfulness and both have normative information of use with non-clinical college populations.

**Perceived Stress Scale.** (PSS; Cohen & Williamson, 1988)

The PSS (see Appendix B) was developed by Cohen, Kamarck, & Mermelstein (1983) to measure the degree in which situations and events in one's life are evaluated as stressful. Specifically, the 10-item version of the PSS (PSS-10; Cohen & Williamson, 1988) measures the degree which one perceives life as uncontrollable, unpredictable, and overloading. The PSS typically requires participants to answer questions based on their experiences in the past 30 days. A modification for this study was for participants to answer the questions based on their experiences and thoughts in the past seven days, as the study was interested in weekly changes. The PSS is not a diagnostic instrument and is only meant for comparisons across samples. The questions are general in nature and can apply to a variety of populations. It was designed for use for those with at least a junior high education. The 10-item version of the PSS (Cohen, S., & Williamson, G. 1988) is a Likert-type rating scale and is widely used as a measure of perceived stress and has been shown to have internal reliability (Coefficient alpha of .78) with established construct validity as the PSS scores showed moderate relation to other measures of appraised stress. PSS-10 scores are obtained by reversing the scores on the four positive items and then summing across all 10 items. Items 4, 5, 7, and 8 are the positively stated items (see Appendix A). Scores can range from 0 to 40, with higher scores indicating greater stress. Roberti, Harrington, & Storch (2006) found the PSS-10 reliable and valid with a non-clinical sample of college students. Normative scores for men were ( $M = 17.4$ ,  $SD = 6.1$ ) and women ( $M = 18.4$ ,  $SD = 6.5$ ).

**Mindful Attention Awareness Scale.** (MAAS; Brown & Ryan, 2003)

The MAAS (see Appendix C) is a 15-item scale designed to measure characteristics of openness or receptiveness to what is taking place in the present. It also aims to assess the level which one is able to observe what is happening around them without judgment (Brown & Ryan, 2003). The MAAS assesses the absence or presence of mindful states of mind over time. For this study, participants were asked to assess their answers based on their experiences and thoughts over the past seven days. Normative information is available for college populations (14 independent samples):  $N = 2277$ ; MAAS  $M = 3.83$ ,  $SD = .70$ . Factor analyses with undergraduate, as well as community populations, confirmed a single factor. Internal consistency levels (Cronbach's alphas) range from .80 to .90. The MAAS has also shown high test-retest reliability, discriminate and convergent validity, and criterion validity (Brown & Ryan, 2003). MacKillop & Anderson (2007) confirmed validity and reliability of the MAAS with internal reliability scores of  $r = 0.89$ .

**Data Analysis**

Visual inspection of the data was the data analysis used in this study. Specifically, visual inspection of the data can reveal changes or non-changes in the dependent variables (self-reported levels of stress & mindfulness) over a period of time (1-6 sessions). Parsonson & Baer (1986) stated visual analysis of single-subject design data is advantageous because it ignores small or weak treatment effects, thereby only capturing large treatment effects which provide more clinically significant information for counselors. Figures are used to graphically depict dependent measure scores over the baseline to intervention phases. Mean scores for baseline phases were compared to mean scores of intervention phases to assess

gains or declines in the stress or mindfulness scores. Also, means scores of participants were compared to normative data to make inference as to the extent of self-reported perceived stress and self-reported level of mindfulness being experienced by participants. Additionally, each participant's individual scores were visually and descriptively analyzed across time to assess gains or losses in stress and mindfulness scores. External factors such as academic and personal stressors experienced throughout the baseline and intervention are discussed and how it may have affected scores. Each experiment is depicted separately as to each dependent variable and two graphs depicting all five experiments and both dependent variables are provided.

## CHAPTER 4

### RESULTS

The research questions for this study were as follows: (1) Does using MBCT in individual sessions increase the self-reported level of mindfulness for a nursing student? (2) Does using MBCT in individual sessions decrease self-reported levels of stress for nursing a student? The hypotheses for the study were as follows: (1) Utilizing MBCT in individual sessions will increase the participant's level of self-reported mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). (2) Utilizing MBCT in individual sessions will decrease the participant's level of self-reported stress as measured by the Perceived Stress Scale (PSS; Cohen & Williamson, 1988). To answer these research questions and to confirm or deny the hypotheses, data from five participants were analyzed individually using visual analyses of line graphs of plotted data points and descriptive statistics.

All five participants completed the full baseline phase (A) of four meetings to complete the dependent measures. In total, four baseline measurements were collected over five-weeks. Out of five participants, three participants (Participants 1, 2, 4) completed the full intervention phase (B) of six one-hour sessions scheduled over five-and-a-half weeks. One participant (Participant 5) completed only two of the intervention sessions before withdrawing from the study. This participant cited a variety of issues including unexpected sickness and time constraints as deciding factors for withdrawal. Another participant (Participant 3) completed three intervention sessions before withdrawing citing time constraints and academic demands as reasons for withdrawal.

The study results indicate that using MBCT in individual sessions does increase the self-reported level of mindfulness for a nursing student. The results of this study also show that using MBCT in individual sessions decreases self-reported levels of stress for nursing a student. Therefore, the hypotheses of this study were confirmed.

## **Effectiveness of MBCT in Reducing Self-Reported Stress and Increasing Self-Reported Mindfulness Levels**

### **Participant 1**

Participant 1 reported no previous experience with mindfulness activities. The baseline mean score on the PSS-10 for Participant 1 was 21.75. Scores can range from 0 to 40, with higher scores indicating greater stress. Roberti, Harrington, & Storch (2006) found the PSS-10 reliable and valid with a non-clinical sample of college students. Normative scores for men were ( $M = 17.4$ ,  $SD = 6.1$ ) and women ( $M = 18.4$ ,  $SD = 6.5$ ). This baseline mean score is significantly higher than the normative sample and indicates some experience of perceived stress as measured by the PSS-10. The baseline mean score on the MAAS was 3.0675. Normative scores on the MAAS for college populations are (14 independent samples):  $N = 2277$ ;  $MAAS M = 3.83$ ,  $SD = .70$ . This baseline mean score is lower than the normative sample and indicates less self-report of mindfulness as measured by the MAAS.

The individual scores over the baseline period for the PSS-10 were variable which may have to do with the time of administration. The  $A_1$  and  $A_4$  scores were both 22. Both of these measurements were taken at high stress academic times. However, the highest score in the baseline phase (25) came at  $A_3$ , on Christmas Eve. These scores support the literature that found several factors leading to nursing student stress, including home and academic

demands (Magnussen and Amundson, 2003). Alternately, the individual scores over the baseline period for the MAAS were mostly stable with a significant drop in A<sub>4</sub> (see Figure 1) which was collected on the last Friday before the spring semester started. With the focus mindfulness places on staying the present moment, as measured by the MAAS, the anticipation of the new semester may have taken precedent. Essentially baseline scores on the PSS-10 were variable as were the academic and home stressors, and MAAS were relatively stable, but below normative scores for college populations.

The intervention mean score on the PSS-10 was 23. This score is a 1.25 point gain from the baseline mean in overall self-reported stress as measured by the PSS-10. However, this gain does not mean that Participant 1 did not benefit from the MBCT intervention as to reduction in self-reported stress. The overall gain in the intervention mean score can be attributed to an unusually high score of 27 on B<sub>1</sub>. The first session of the intervention also fell on the first week of classes for the spring semester. This is traditionally a stressful time in a student's life as they are adjusting to new professors, classes, and academic demands. Additionally, Participant 1 had only 50 minutes of exposure to mindfulness activities at this time.

The individual scores of the intervention phase show a steady trend of decreasing PSS-10 scores from B<sub>1</sub>-B<sub>3</sub> (see Figure 1) while showing a steady trend of increasing MAAS scores at the same time (see Figure 2). B<sub>4</sub> shows a 1 point increase from B<sub>3</sub> in PSS-10 scores that coincides with Participant 1's experiencing a medical emergency. Despite this crisis, stress scores increased minimally while the mindfulness score increased by .47 from B<sub>3</sub> to

B<sub>4</sub>. It is possible that the participant was able to handle an unexpected crisis more efficiently and mindfully as a result of the skills learned in the intervention.

MAAS scores continued to increase throughout the intervention phase with highest score of 4.93 coming at the final session (see Figure 2). This indicated that increased exposure and practice of mindfulness activities correlated with higher self-report of mindfulness scores. This is confirmed by an increase of 0.88917 in the mean scores on the MAAS from baseline to intervention and a gain of 2.73 from B<sub>1</sub> to B<sub>6</sub>. Table 1 provides all of the baseline and intervention phase scores.

For Participant 1, it appears that MBCT was successful overall in lowering self-reported stress as measured by the PSS-10 while increasing self-reported mindfulness levels as measured by the MAAS.

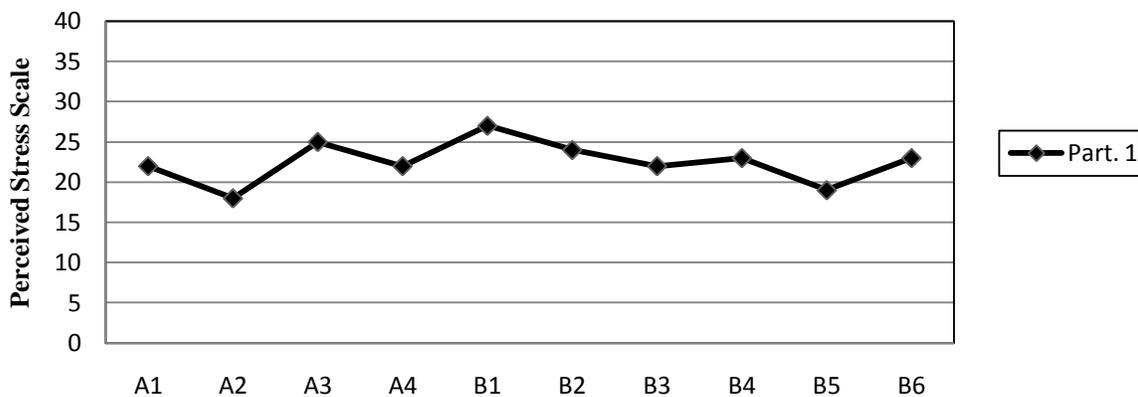


Figure 1: PSS Scores for Participant 1

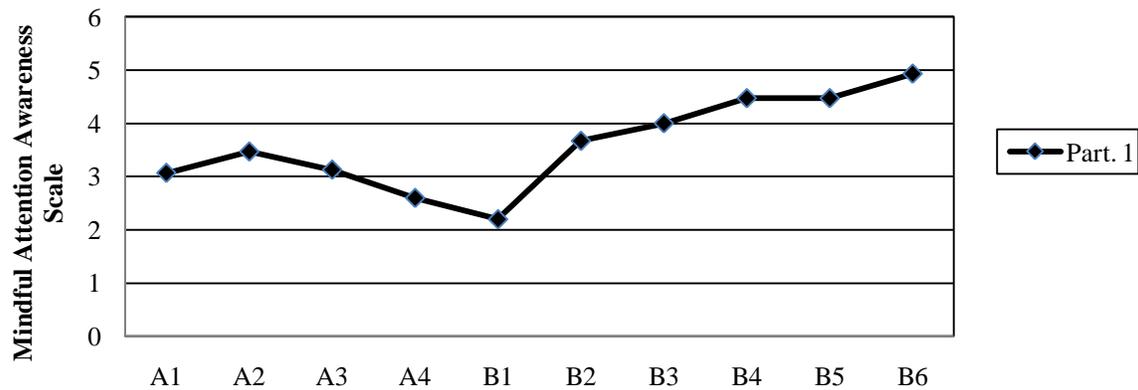


Figure 2: MAAS Scores for Participant 1

Table 1  
*Dependent Measure Scores for Participant 1*

| Baseline<br>A 1-4 | Intervention<br>B 1-6 | PSS<br>PSS | PSS<br>Means | PSS<br>SD | MAAS<br>MAAS | MAAS<br>Means | MAAS<br>SD |
|-------------------|-----------------------|------------|--------------|-----------|--------------|---------------|------------|
| A1                |                       | 22         |              |           | 3.07         |               |            |
| A2                |                       | 18         |              |           | 3.47         |               |            |
| A3                |                       | 25         |              |           | 3.13         |               |            |
| A4                |                       | 22         | 21.75        | 2.8722813 | 2.6          | 3.0675        | 0.3579921  |
|                   | B1                    | 27         |              |           | 2.2          |               |            |
|                   | B2                    | 24         |              |           | 3.67         |               |            |
|                   | B3                    | 22         |              |           | 4            |               |            |
|                   | B4                    | 23         |              |           | 4.47         |               |            |
|                   | B5                    | 19         |              |           | 4.47         |               |            |
|                   | B6                    | 23         | 23           | 2.607681  | 4.93         | 3.9566667     | 0.9637773  |

## Participant 2

Participant reported no previous experience with mindfulness activities. The baseline mean score on the PSS-10 for Participant 2 was 22.25. This baseline mean score is significantly higher than the normative sample and indicates some experience of perceived

stress as measured by the PSS-10. The baseline mean score on the MAAS was 2.9. This baseline mean score is lower than the normative sample and indicates less self-report of mindfulness as measured by the MAAS. The individual scores over the baseline period for the PSS-10 showed a steady increase in stress scores, with the highest baseline score (25) coming at A<sub>4</sub> (see Figure 3). This measurement was taken on the Friday before the spring semester started, certainly a high stress academic time. The individual scores over the baseline period for the MAAS were mostly stable with the lowest score (2.33) coming at A<sub>1</sub>. This measurement was taken during final exam week and also was the first contact with the researcher and with any in depth introduction to the study. Essentially baseline scores on the PSS-10 increased steadily and MAAS were relatively stable once past the initial baseline meeting, but all still remained below the normative scores (see Figures 3 & 4).

The intervention mean score on the PSS-10 was 25.17. This score is a 2.92 point gain from the baseline mean in overall self-reported stress as measured by the PSS-10. The overall gain in the intervention mean score can be attributed to an unusually high score of 28 on B<sub>1</sub>. The first session of the intervention also fell on the first week of classes for the spring semester. Participant 1 also posted a high score (27) on Session 1 of the intervention.

Additionally, Participant 2 had only 50 minutes of exposure to mindfulness activities at this time. However, there was a significant drop of 5 points on the PSS-10 from B<sub>1</sub> to B<sub>2</sub> that might be attributed to some type of novelty effect of being introduced to a new and unusual treatment (MBCT). This argument is strengthened by the fact that Participant 2 posted stable stress scores throughout the rest of the intervention. It should be noted that Participant 2 informed the researcher after B<sub>4</sub> that she would need to withdrawal from the

study due to time constraints and academic demands. Eventually she changed her mind and stated that she would finish the study. The participant reported feeling some personal distress throughout the next two sessions, but did not feel she needed any additional intervention.

MAAS scores continued to increase throughout the intervention phase with highest score of 3.73 coming at the final session (see Figure 4). This indicated that increased exposure and practice of mindfulness activities correlated with higher self-report of mindfulness scores. This is confirmed by an increase of 0.54 in the mean scores on the MAAS from baseline to intervention and a gain of 0.46 from B<sub>1</sub> to B<sub>6</sub>. Table 2 provides all of the baseline and intervention phase scores.

For Participant 2, it appears that MBCT was successful overall in increasing self-reported mindfulness levels as measured by the MAAS. Based on the conservative score increases and drops in stress over time, and the continued self-report of personal distress through the final session, the MBCT intervention was only minimally successful in stress reduction for Participant 2.

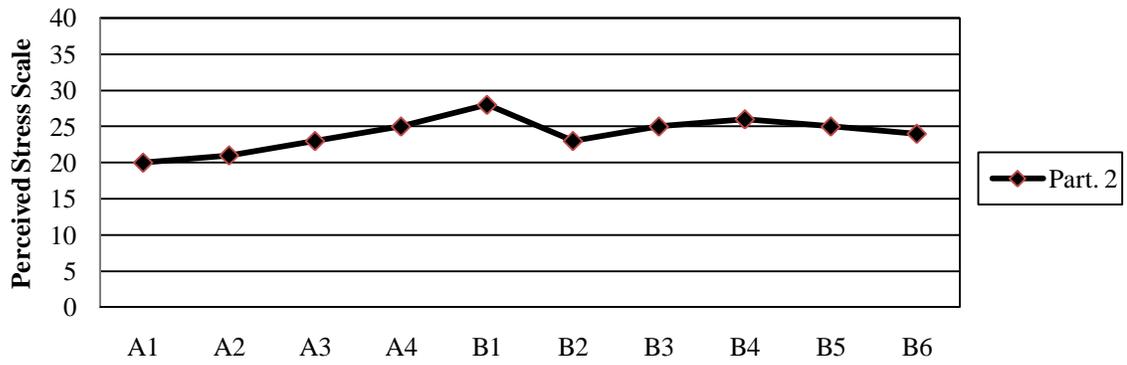


Figure 3: PSS Scores for Participant 2

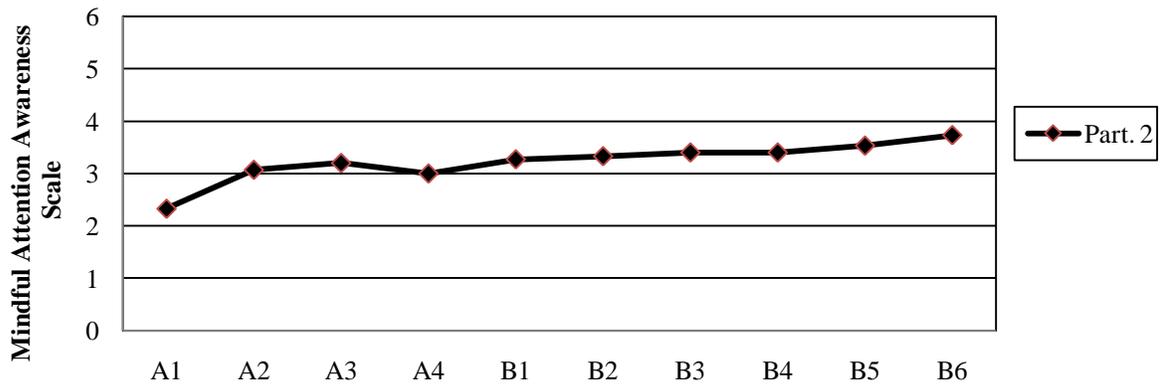


Figure 4: MAAS Scores for Participant 2

Table 2  
*Dependent Measure Scores for Participant 2*

| Baseline | Intervention | PSS |       | PSS       |      | MAAS  |            | MAAS |    |
|----------|--------------|-----|-------|-----------|------|-------|------------|------|----|
| A 1-4    | B 1-6        | PSS | Means | SD        | MAAS | Means | SD         | SD   | SD |
| A1       |              | 20  |       |           | 2.33 |       |            |      |    |
| A2       |              | 21  |       |           | 3.07 |       |            |      |    |
| A3       |              | 23  |       |           | 3.2  |       |            |      |    |
| A4       |              | 25  | 22.25 | 2.2173557 | 3    | 2.9   | 0.38893014 |      |    |
|          | B1           | 28  |       |           | 3.27 |       |            |      |    |
|          | B2           | 23  |       |           | 3.33 |       |            |      |    |
|          | B3           | 25  |       |           | 3.4  |       |            |      |    |
|          | B4           | 26  |       |           | 3.4  |       |            |      |    |
|          | B5           | 25  |       |           | 3.53 |       |            |      |    |
|          | B6           | 24  | 25.17 | 1.7224014 | 3.73 | 3.44  | 0.16512622 |      |    |

### Participant 3

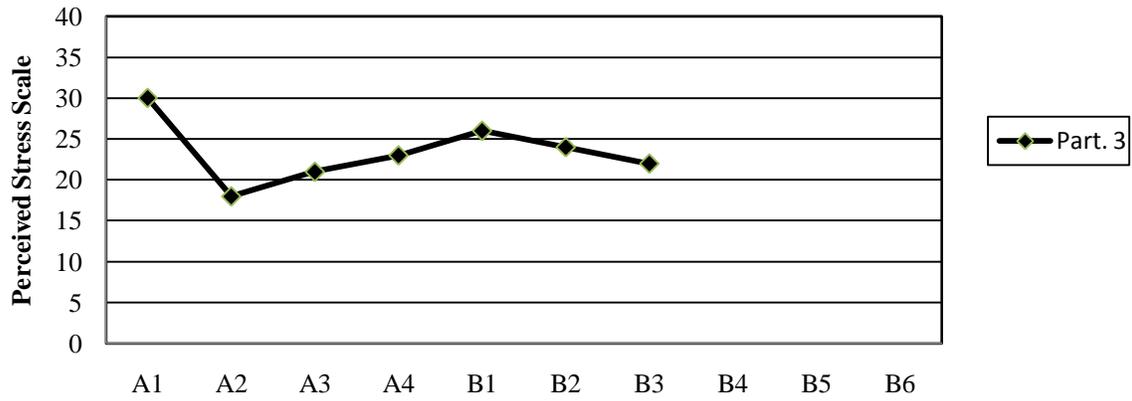
Participant 3 reported no previous experience with mindfulness activities. The baseline mean score on the PSS-10 for Participant 3 was 23. This baseline mean score is significantly higher than the normative sample and indicates some experience of perceived stress as measured by the PSS-10. The baseline mean score on the MAAS was 2.54. This baseline mean score is significantly lower than the normative sample, and the lowest in this sample, and indicates less self-report of mindfulness as measured by the MAAS. The individual scores over the baseline period for the PSS-10 showed a baseline high of 30 at A<sub>1</sub> (see Figure 5). This measurement was taken in the middle of final exam week. PSS-10 scores dropped 12 points from A<sub>1</sub> to A<sub>2</sub>. A<sub>2</sub> was taken at the beginning of Christmas week. This indicates that Participant 3 reports significantly higher stress at times when academic pressures are present.

The individual scores over the baseline period for the MAAS were mostly stable with the lowest scores (both 2.27) coming at A<sub>1</sub> and A<sub>4</sub>, both measurements focused on academic

events (final exam week, first week of class) indicating lowered ability to remain presently focused and attentive when faced with academic responsibilities (see Figure 6). Essentially baseline scores on the PSS-10 were variable as were academic and personal experiences and MAAS were relatively stable other than lower scores at academic stress times, but all still remained below the normative scores. Table 3 provides all of the baseline and intervention phase scores.

Participant 3 completed three intervention sessions before withdrawing from the study, citing time constraints and academic demands as reasons for withdrawal. The analysis of scores is based on the three completed intervention sessions. The intervention mean score on the PSS-10 was 24. This score is a 1 point gain from the baseline mean in overall self-reported stress as measured by the PSS-10. This 1 point gain should be interpreted cautiously as the baseline scores contained an outlier (30) and the intervention mean was calculated from only three scores. Additionally, the trend in the individual scores was toward a decrease in self-reported stress as the trend in individual scores on the MAAS was toward increasing scores (see Figures 5 & 6). MAAS scores continued to increase throughout the intervention phase with the highest score of 3.73 coming at the final session. This indicated that increased exposure and practice of mindfulness activities correlated with higher self-report of mindfulness scores. This is confirmed by an increase of 0.55 in the mean scores on the MAAS from baseline to intervention and a gain of 1.46 from B<sub>1</sub> to B<sub>3</sub>. For Participant 3, it appears that MBCT was showing promise in helping to reduce self-reported stress levels and increase self-reported levels of mindfulness. It is possible that the perception of those

benefits being experienced by Participant 3 were not significant enough to warrant participation in the study in the face of academic demands and time constraints.



Figures 5: PSS Scores for Participant 3

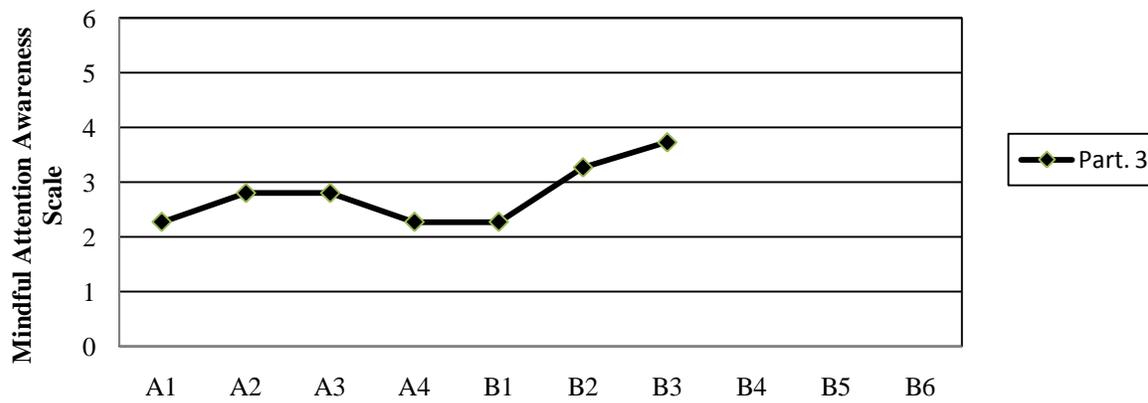


Figure 6: MAAS Scores for Participant 3

Table 3  
*Dependent Measure Scores for Participant 3*

| Baseline | Intervention | PSS |       | PSS       | MAAS |       | MAAS      |
|----------|--------------|-----|-------|-----------|------|-------|-----------|
| A 1-4    | B 1-6        | PSS | Means | SD        | MAAS | Means | SD        |
| A1       |              | 30  |       |           | 2.27 |       |           |
| A2       |              | 18  |       |           | 2.8  |       |           |
| A3       |              | 21  |       |           | 2.8  |       |           |
| A4       |              | 23  | 23    | 5.0990195 | 2.27 | 2.54  | 0.3059956 |
|          | B1           | 26  |       |           | 2.27 |       |           |
|          | B2           | 24  |       |           | 3.27 |       |           |
|          | B3           | 22  | 24    | 2         | 3.73 | 3.09  | 0.7464583 |
|          | B4           |     |       |           |      |       |           |
|          | B5           |     |       |           |      |       |           |
|          | B6           |     |       |           |      |       |           |

#### **Participant 4**

Participant 4 reported no previous experience with mindfulness activities. The baseline mean score on the PSS-10 for Participant 4 was 20.75. This baseline mean score is significantly higher than the normative sample and indicates some experience of perceived stress as measured by the PSS-10. The baseline mean score on the MAAS was 2.6975. This baseline mean score is lower than the normative sample and indicates less self-report of mindfulness as measured by the MAAS. The individual scores over the baseline period for the PSS-10 showed a baseline high of 27 at A<sub>1</sub> (see Figure 7). This measurement was taken in the middle of final exam week. PSS-10 scores dropped 8 points from A<sub>1</sub> to A<sub>2</sub>. A<sub>2</sub> was taken at the beginning of Christmas week. This indicates that Participant 4 also reported significantly higher stress at times when academic pressures are present, although the score (20) at A<sub>4</sub>, another academic event, was stable with the rest of the baseline A<sub>2</sub> – A<sub>3</sub>. The difference between the two academic events was that one A<sub>1</sub> was evaluative (final exams) and A<sub>4</sub> was anticipatory (week before classes).

The individual scores over the baseline period for the MAAS were mostly stable from A<sub>2</sub> – A<sub>4</sub> with the lowest score (1.93) coming at A<sub>1</sub> indicating lowered ability to remain presently focused and attentive when faced with evaluative academic events (see Figure 8). It appears that Participant 4 posted stable baseline scores on both the PSS-10 and the MAAS except for the first baseline meeting occurring during final exam week. At this meeting, the stress score was high and the mindfulness score was low.

The intervention mean score on the PSS-10 was 22.17. This score is a 1.42 point gain from the baseline mean in overall self-reported stress as measured by the PSS-10. The overall gain in the intervention mean score can be attributed to an unusually high score of 28 on B<sub>3</sub>. Participant 4 did report increased personal and academic distress at this time in the study. However, there was a significant drop of 7 points on the PSS-10 from B<sub>3</sub> to B<sub>4</sub>, and drops in stress score continued throughout the rest of the intervention phase. Table 4 provides all of the baseline and intervention phase scores.

MAAS scores continued to trend towards an increase throughout the intervention phase with highest score of 5.13 coming at the final session (see Figure 8). This is confirmed by an increase of 1.1025 in the mean scores on the MAAS from baseline to intervention and a gain of 3.46 from B<sub>1</sub> to B<sub>6</sub>. It is possible that the trend in decreasing scores in stress were associated with the increasing scores in mindfulness.

For Participant 4, it appears that MBCT was successful overall in increasing self-reported mindfulness levels as measured by the MAAS, and that in sessions B<sub>3</sub> – B<sub>6</sub> that as MAAS scores increased, PSS-10- scores decreased at conservative levels. Based on the later

stages of self-reported stress reduction, it may be possible that Participant 4 needed more exposure to mindfulness activities before experiencing benefits.

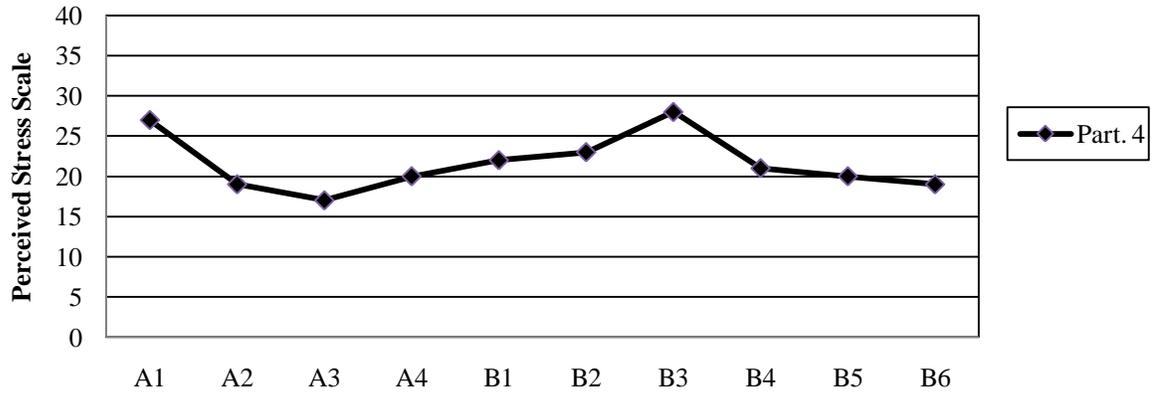


Figure 7: PSS Scores for Participant 4

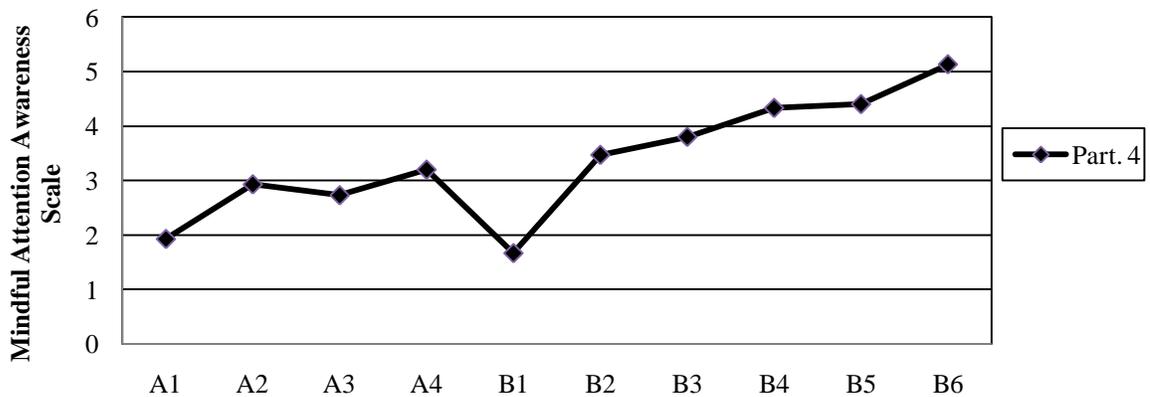


Figure 8: MAAS Scores for Participant 4

Table 4  
*Dependent Measure Scores for  
 Participant 4*

| Baseline | Intervention | PSS | PSS   | PSS       | MAAS | MAAS   |            |
|----------|--------------|-----|-------|-----------|------|--------|------------|
| A 1-4    | B 1-6        | PSS | Means | SD        | MAAS | Means  | SD         |
| A1       |              | 27  |       |           | 1.93 |        |            |
| A2       |              | 19  |       |           | 2.93 |        |            |
| A3       |              | 17  |       |           | 2.73 |        |            |
| A4       |              | 20  | 20.75 | 4.3493295 | 3.2  | 2.6975 | 0.54670984 |
|          | B1           | 22  |       |           | 1.67 |        |            |
|          | B2           | 23  |       |           | 3.47 |        |            |
|          | B3           | 28  |       |           | 3.8  |        |            |
|          | B4           | 21  |       |           | 4.33 |        |            |
|          | B5           | 20  |       |           | 4.4  |        |            |
|          | B6           | 19  | 22.17 | 3.1885211 | 5.13 | 3.8    | 1.1879057  |

### **Participant 5**

Participant reported some experience with mindfulness activities. The baseline mean score on the PSS-10 for Participant 5 was 19.5. This baseline mean score is higher than the normative sample and indicates some experience of perceived stress as measured by the PSS-10. The baseline mean score on the MAAS was 2.7675. This baseline mean score is significantly lower than the normative sample and indicates less self-report of mindfulness as measured by the MAAS. The individual scores over the baseline period for the PSS-10 showed a baseline high of 26 at A<sub>1</sub>. This measurement was taken in the middle of final exam week. PSS-10 scores dropped 9 points from A<sub>1</sub> to A<sub>2</sub>. A<sub>2</sub> was taken at the beginning of Christmas week. This may indicate that Participant 5 reports significantly higher stress at times when evaluative academic events are present. The rest of the scores for the PSS-10 baseline phase were stable and within normative limits (see Figure 9).

The individual scores over the baseline period for the MAAS were variable with the lowest scores (1.8, 2.6) coming at A<sub>1</sub> and A<sub>4</sub>, both measurements focused on academic events (final exam week, first week of class) possibly indicating lowered ability to remain presently focused and attentive when faced with academic responsibilities (see Figure 10). MAAS scores during personal events such as a holiday break were higher and near normative.

Participant 5 completed two intervention sessions before withdrawing from the study, citing time constraints and personal and family illnesses as reasons for withdrawal. The analysis of scores is based on the two completed intervention sessions. The intervention mean score on the PSS-10 was 22.5. This score is a 3-point gain from the baseline mean in overall self-reported stress as measured by the PSS-10. This 3-point gain should be interpreted cautiously as the baseline scores contained an outlier (26) and the intervention mean was calculated from only two scores. Additionally, the trend in the individual scores was toward a decrease in self-reported stress as the trend in individual scores on the MAAS was toward increasing scores (see Figures 9 & 10). This is confirmed by a gain of 0.47 from B<sub>1</sub> to B<sub>2</sub> on the MAAS and a decrease of 3-points on the PSS-10 in the same timeframe. Table 5 provides all of the baseline and intervention phase scores.

For Participant 5, it appears that MBCT was showing promise in helping to reduce self-reported stress levels and increase self-reported levels of mindfulness. It is possible that the perception of those benefits being experienced by Participant 5 were not significant enough to warrant participation in the study in the face of significant personal distress and scheduling issues brought on by personal and family illness.

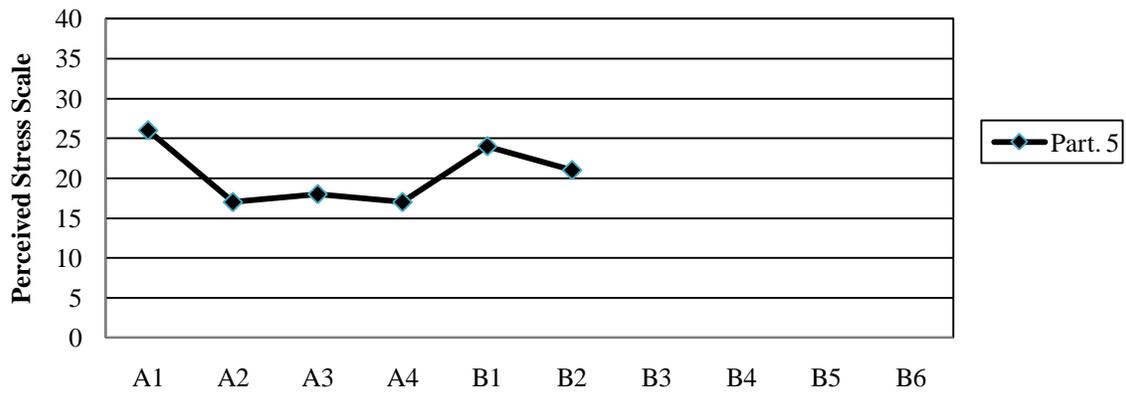


Figure 9: PSS Scores for Participant 5

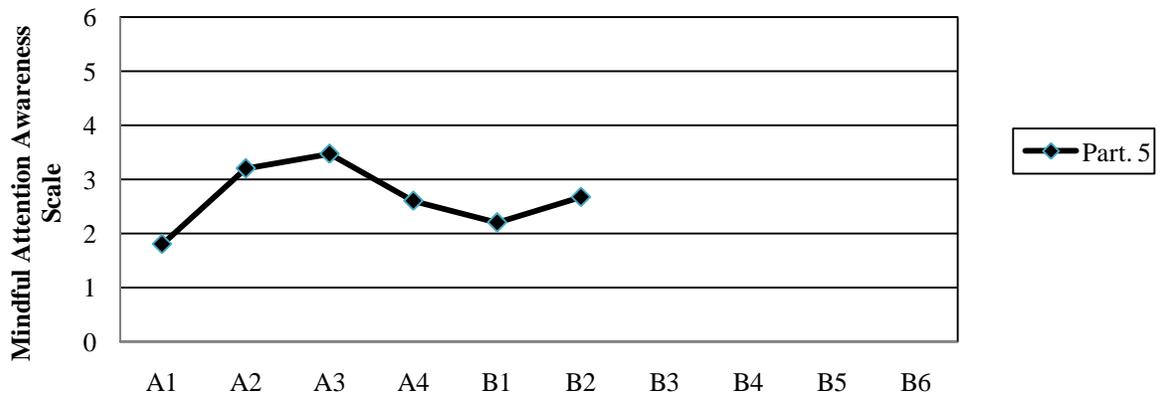


Figure 10: MAAS Scores for Participant 5

Table 5  
*Dependent Measure Scores for Participant 5*

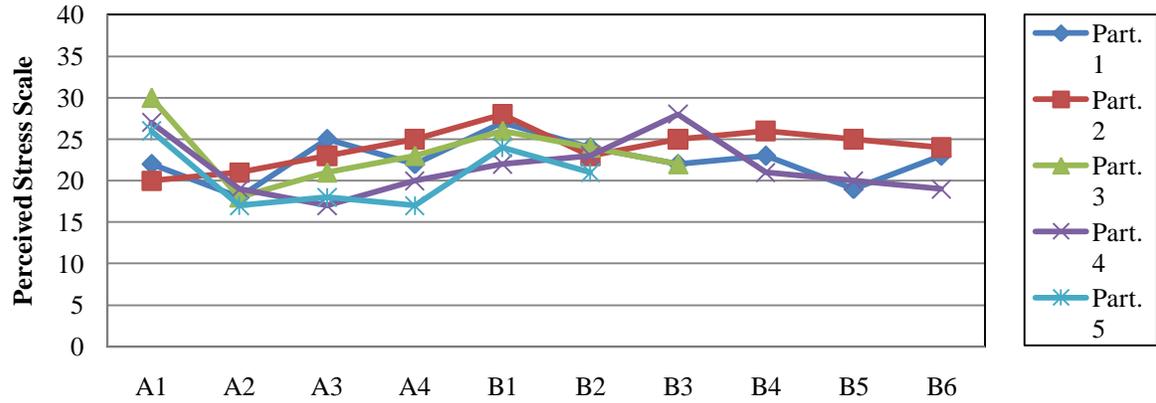
| Baseline | Intervention | PSS | PSS   | PSS      | MAAS | MASS   | MASS      |
|----------|--------------|-----|-------|----------|------|--------|-----------|
| A 1-4    | B 1-6        | PSS | Means | SD       | MAAS | Means  | SD        |
| A1       |              | 26  |       |          |      | 1.8    |           |
| A2       |              | 17  |       |          |      | 3.2    |           |
| A3       |              | 18  |       |          |      | 3.47   |           |
| A4       |              | 17  | 19.5  | 4.358899 | 2.60 | 2.7675 | 0.7404222 |
|          | B1           | 24  |       |          |      | 2.2    |           |
|          | B2           | 21  | 22.5  | 2.12132  | 2.67 | 2.435  | 0.3323402 |
|          | B3           |     |       |          |      |        |           |
|          | B4           |     |       |          |      |        |           |
|          | B5           |     |       |          |      |        |           |
|          | B6           |     |       |          |      |        |           |

### **Summarization of Participant Results**

The study results indicate that exposure to an MBCT intervention can reduce self-reported stress scores as measured by the PSS-10 and increase self-reported mindfulness scores as measured by the MAAS. Specifically, PSS-10 scores were variable during the baseline phase and that variability could be explained by academic events, evaluative and anticipatory, occurring at the time of administration of dependent measures. However, once the MBCT intervention phase began, all but one of the participants showed steady drops in PSS-10 scores (see Figure 11).

Alternatively, all five participants showed relatively stable, but lower than normative, baseline scores on the MAAS. However, once the MBCT intervention began, all of the participants show significant improvement of mindfulness scores as measured by the MAAS (see Figure 12). During the intervention phase, no MAAS scores declined for any of the participants, indicating that exposure to and practice of mindfulness activities and exercises enhances the state of mindfulness for these five nursing students.

Finally, there are multiple instances throughout participant scores that showed correlation between lower scores on the PSS-10 with higher scores on the MAAS. This is a possible quantitative indicator that increased mindfulness was associated with lower stress. While, qualitative data was not collected for use in this study, study participants continually mentioned using mindfulness techniques throughout the intervention phase as a way of migrating stressful perspectives on events.



Figures 11: PSS Scores for All Participants

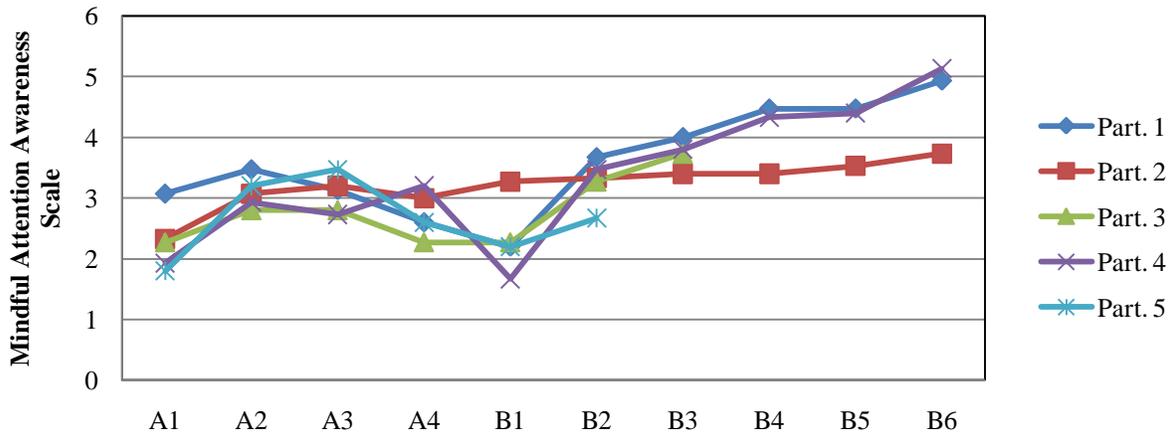


Figure 12: MAAS Scores for All Participants

## CHAPTER 5

### DISCUSSION

#### **Study Purpose and Summary**

The purpose of this study was to explore the effectiveness of using a modified MBCT intervention to help nursing students reduce self-reported stress and increase self-reported levels of mindfulness during their academic training program. Students training to be nurses at the university level are subjected to high levels of stress and report higher levels than students from other health professions (Beddoe & Murphy, 2004). Additionally, because of the high stakes academic atmosphere in nursing education, fewer young people are choosing nursing as a viable career option (Magnussen & Amundson, 2003). This, along with the increasing average age of nurses currently in practice and significant attrition rates of 20% to 41% for all nursing programs, has led to a nursing shortage crisis (Buerhaus, Staiger, & Auerbach 2000; Moore, 1996). It is imperative that nurse educators, college administrators, and college counselors help nursing students to assess their stressors, and more importantly develop effective interventions to address them effectively.

Specifically, this study utilized a modified version of MBCT in individual sessions to teach and process the MBCT core skills of mindfulness meditation and cognitive decentering. The modifications included combining session content to reduce the length of the intervention from eight to six weeks and reduce the session length from two-and-a-half hours to one hour. These modifications were made to accommodate the multiple demands of nursing student schedules. The use of MBCT in an individual modality has little available research and this study will add to the literature in measuring the efficacy of MBCT in

individual sessions. Additionally, this researcher could find no research on the use of MBCT in reducing the stress of nursing students.

The research questions for this study are as follows: (1) Does using MBCT in individual sessions increase the self-reported level of mindfulness for a nursing student? (2) Does using MBCT in individual sessions decrease self-reported levels of stress for nursing a student? The hypotheses for the study are as follows: (1) Utilizing MBCT in individual sessions will increase the participant's level of self-reported mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). (2) Utilizing MBCT in individual sessions will decrease the participant's level of self-reported stress as measured by the Perceived Stress Scale (PSS; Cohen & Williamson, 1988).

The research design was five AB single-subject experimental designs with repeated measures. The baseline phase (A) consisted of four meetings with each participant to administer the dependent measures. The researcher scheduled the meetings strategically to obtain measurements that would include a balance between school and home experiences. The intervention phase (B) consisted of six one-hour sessions scheduled over five-and-a-half weeks. Each session consisted of 50-minutes focusing on MBCT skills, concepts, and homework assignments, and 10-minutes at the end of the session to administer the dependent measures.

Participants for this study were all senior-level students enrolled in a Bachelor of Science in Nursing (BSN) program at a small rural southeastern university. Four of the participants were female, and one was male. Participant ages ranged from 21-30 years old.

The mean age of the participants was 25.6 years old. Three of the participants were Caucasian, one was Hispanic American, and one was Native American.

### **Discussion of Findings**

The study results indicated that using MBCT in individual sessions does increase the self-reported level of mindfulness for a nursing student as posed by the first research question. The results of this study also show that using MBCT in individual sessions decreases self-reported levels of stress for a nursing student as posed by the second research question. Therefore, hypotheses one and two of this study were confirmed. Stress reduction as measured by the PSS-10 was confirmed in four out of five participants. One participant reported initial increases in PSS-10 scores during the first three sessions of the intervention phase, and only minimal drops in the last three. However, all five participants reported continually increasing levels of mindfulness as measured by the MAAS.

Specifically, with some caution, one can assume that the increasing mindfulness levels were associated with the reduced perception of stress as the results showed multiple intersections between the two dependent measures where PSS-10 scores decreased when MAAS scores increased. Additionally, qualitative data, not formally analyzed here, suggested participants were cognizant of how meditation and decentering were benefiting them in multiple areas of their lives.

Findings from this study also supports the research that nursing students experience significant classroom-related stress due to large quantities of information to learn and exam anxiety (Hamill, 1995). All five participants experienced their highest peak stress scores during academic-related events during the baseline and intervention phases. Two

participants reported peak stress scores during baseline and intervention phases that they attributed to conflict or difficulty in balancing personal and academic responsibilities. This is also confirmed in the literature as Magnussen and Amundson's (2003) review of the nursing student experience found several factors leading to stress, including balancing home and academic demands. Additionally, one of the academic stressors not related to the quantity or complexity of material was reported by several participants as negative interactions with faculty. Thomas (2003) found that students who perceived the nursing faculty as unfair, rigid, or discriminatory, or who had unrealistic or highly critical styles developed anger and disappointment with their nursing program. In this study, some high scores on the PSS-10 appeared to be associated with perceptions and interactions of difficult and overly critical faculty members, however, these inferences should be viewed with caution as no formal analysis was conducted on the data to establish a statistical correlation.

All participants reported lower than normative levels of mindfulness at baseline as measured by the MAAS. Specifically, all five participants posted their lowest mindfulness scores on days that coincided with a high stress academic event such as final exam week, or day before first week of classes. This may suggest that academic stress competed with the ability for these participants to remain presently focused and non-judgmental about their circumstances. Mindfulness and the practice of mindfulness activities are not commonly used stress management techniques, and all but one of the participants reported no experience with mindfulness before the study. One participant reported "a little" experience or knowledge about mindfulness. However, the research is promising in utilizing mindfulness interventions with nursing students to reduce stress. One study (Beddoe & Murphy, 2004)

utilizing MBSR focused on undergraduate nursing students who participated in an 8-week MBSR course to reduce stress and improve empathy skills. The results indicated significant decreases in anxiety levels and increased ability to handle stressful events.

All nursing students in this study showed gains in mindfulness levels as measured by the MAAS. This may have occurred due to the fact that most of the participants began with no knowledge or experience with mindfulness. Once exposed to the practice of meditation and other mindfulness exercises, present moment awareness and nonjudgmental cognitive processes increased steadily.

The homework assignments also were an important component of the study, but were made optional due to highly scheduled participants. All participants chose to complete some homework and practice meditations outside of study sessions; however, the frequency of amounts varied significantly. Ancillary findings from Collard, Avny, & Boniwell (2008) found a correlation between longer practice times of mindfulness and higher levels of mindfulness. An analysis of the data surrounding participant practice time and higher or lower levels of obtainment of mindfulness would have been an interesting component to add to this study.

### **Limitations of the Study**

One limitation of this study is the inherent limitation of all single-subject designs. Specifically, external validity is an issue with single-subject designs. Because this study provides separate experiments that provide data on only one case, it is hard to make generalizations about other cases. However, external validity can be enhanced by replicating the design multiple times, thus strengthening possibilities for generalizations (Heppner et al.,

2008). Some of the external validity issues were mitigated by replicating the design five times. However, two of the participants withdrew from the study before finishing all six sessions of the intervention, thus providing an incomplete data set for those two experiments. This is another threat to the external validity of the study.

The fact that these five participants volunteered for the study creates issues with internal validity related to selection. The sample used were motivated enough to volunteer for the study, and this may mean that these participants were more stressed than other nursing students and were more motivated to seek out solutions for this stress. It also may have meant that the intervention proposed was appealing to them and thus they were more amenable to the concept of mindfulness. Alternatively, the willingness to volunteer for the study may have meant these particular participants were less stressed and had more free time to participate in a weekly intervention. These variables were not controlled for in the study, and therefore, are a limitation.

Another limitation could be the modifications made to the MBCT intervention to accommodate nursing student schedules. The MBCT intervention was reduced from 8-weeks to 6-weeks for the purposes of this study. Additionally, the session lengths were reduced from two-and-a-half hours to one hour. Again, this was to accommodate busy nursing student schedules. Mindfulness activities and exercises are best learned through intensive practice and exposure. Some of this practice and exposure had to be sacrificed to create a reasonably convenient experience for the participants. However, some of this sacrifice was mitigated by comprehensive homework assignments and the flexibility for participants to put as much effort into practice as they desired.

The use of only one dependent measure for each dependent variable was also a limitation. The PSS-10 and the MAAS measured self-reported stress and mindfulness. The use of other instruments or data to measure the two dependent variables would have strengthened the study. Specifically, a mixed methods design could have focused on the provided quantitative measures as well as analysis of the homework forms and the participant's verbal session content. Potentially, because of the timing of the study, and because stress is often linked with college student academic failure (ACHA, 2010), final exam grades and mid-term grades could have been compared to assess for academic changes based on the introduction of the intervention. Some control measure to assess for social desirability of scores would have also strengthened the study.

Another threat to the internal validity of the study is with the length of the baseline and intervention phases. Both phases together lasted over eleven weeks. Problems with history may have influenced stress scores as multiple events occurred throughout the eleven weeks including: Finals exams, Christmas, beginning of a new semester, and multiple tests and clinical evaluations for the nursing program. Particularly with a construct as sensitive to history effects as stress, scores most likely had some variability due personal and academic experiences.

### **Implications for Counseling**

This study strengthens the growing research base in the use of MBCT. Specifically, it adds to the literature supporting the efficacy of MBCT in reducing stress. A unique contribution is the use of MBCT in a single-subject experimental design. Typically, MBCT

is used in a class format. This study provides evidence of effectiveness of MBCT in individual sessions.

Based on the above implications, this study also has significant implications for college counselors and nursing student educators. Due to high attrition, academic distress, and high stakes testing, nursing programs are struggling how to help their students be successful. College counselors are there to provide services that address the academic and personal well-being of students. This study indicates that cooperation and collaboration between an academic program and a college counseling center can yield positive results.

College counselors and nursing faculty can work together to provide mindfulness-based workshops or other activities that promotes a meditative approach. Developing effective partnerships should begin with an assessment of available mindfulness resources for this population. Program administrators want their students to be successful and may be willing to integrate resources from outside of the program. Many colleges and universities may have a trained counselor on staff that can provide these services. If not, negotiations with certified off-campus meditation or yoga centers could provide reduced rates for students. More importantly, counselors could train nursing faculty in mindfulness exercises that could be weaved throughout the fabric of the program.

College counselors will do well to learn the language and culture of the nursing program that is being targeted. Crafting mindfulness interventions to correspond directly with the stressors related to the program may help develop rapport with students. Also, sharing any data gathered from program evaluations or studies with administrators can strengthen relationships by assisting them with long term program goals.

## **Future Areas of Research**

Future areas of research include the use of MBCT and other mindfulness-based interventions with other nursing students to see if these results can be replicated. More research is needed on delivering MBCT in an individual format with nursing students. Another component of this study that needs more exploration is whether the longer amount of time in practice of mindfulness activities provides greater relief from self-reported stress symptoms. Additionally, while this study had a relatively diverse sample, use of MBCT interventions with male nurses and other ethnic and cultural groups is needed.

Another area of study should be to test the efficacy of internet or technological delivery of mindfulness-based interventions to nursing students. The overscheduled, highly structured life of these participants sometimes made meeting for sessions difficult. Two of the participants dropped out of the study due to time constraints. Developing a MBCT intervention that could be delivered over the web or through some other technology might allow students to access the benefits without feeling the threat of competing commitments.

Teaching mindfulness-based interventions like MBCT to nursing faculty and incorporating elements of the interventions throughout the nursing program should be tested to ascertain the effectiveness in reducing stress levels. Embedding mindfulness in nursing programs may be more effective and efficient because students may see this as part of their training instead of an addition.

This study provided a successful outcome of using MBCT with students from a nursing program. Future studies should focus on utilizing mindfulness interventions with students from all different types of academic departments that allow for targeted individual

and group counseling that addresses the specific stressors of that program. Attention should be devoted to developing comprehensive guidelines for effective partnerships between college counseling centers and professional training programs.

### **Conclusion**

This exploratory study provided evidence of self-reported stress reduction in four out of five nursing students when participating in a modified MBCT intervention. The study results indicate that using MBCT in individual sessions does increase the self-reported level of mindfulness for a nursing student as posed by the first research question. The results of this study also show that using MBCT in individual sessions decreases self-reported levels of stress for nursing a student as posed by the second research question. Therefore, hypotheses one and two of this study were confirmed.

College counselors and nursing faculty may want to think about strategies that combine their expertise to develop partnerships that ensure student success. MBCT has been shown to be a good fit with the holistic approaches to health that are often the focus of nursing student training. Offering mindfulness building options to students may be the link to developing holistic approaches that combine academic and wellness strategies.

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## APPENDICES

## Appendix A

**University of North Carolina at Pembroke  
North Carolina State University  
INFORMED CONSENT FORM for RESEARCH  
THIS FORM IS VALID NOVEMBER 29, 2010 TO NOVEMBER 29, 2011**

**Title of Study: Assessing the Effectiveness of Mindfulness-Based Cognitive Therapy in Individual Sessions in Reducing Self-Reported Stress and Increasing Self-Reported Mindfulness Levels of a Nursing Student.**

**Principal Investigator: Mark Schwarze, MA, LPC, NCC, LCAS, CCS**

**Faculty Sponsor: Dr. Edwin Gerler**

### **What are some general things you should know about research studies?**

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the Principal Investigator of this study, Mark Schwarze.

### **What is the purpose of this study?**

The purpose of this proposed research is to conduct a study that will measure the effectiveness of reducing self-reported stress and increasing levels of self-reported mindfulness using individual counseling sessions with a nursing student. The study will be replicated three times with three other students to increase external validity. Students training to be nurses at the university level are subjected to high levels of stress through significant information intake, long hours in the classroom and in clinicals, and high-stakes testing that determines their ability to remain in the program. The demands of a nursing training program coupled with outside family and employment responsibilities can cause levels of stress that affect emotional well-being and academic performance. This study will use Mindfulness-Based Cognitive Therapy (MBCT) to attempt to help you learn techniques to reduce stress and increase levels of mindfulness. To learn more about mindfulness and MBCT, please visit <http://mbct.com/>.

### **What will happen if you take part in the study?**

If you agree to participate in this study, you will be asked to contact the researcher for an initial study orientation appointment. At this appointment, the researcher will meet with you to explain the study requirements. You will be asked to complete a demographic form asking for the following information: Student classification level, ethnicity, age, gender, and if you have had any experience with mindfulness.

Additionally, you will also be asked to complete two surveys, the Perceived Stress Scale (PSS) and the Mindful Attention Awareness Scale (MAAS). You will also be asked to complete these scales three more times in the next two weeks. You will then be given a time and date for the first session appointment. Participants **will not** be clients of the Counseling & Testing Center, however, sessions will take place in the Counseling & Testing Center or other confidential location as deemed appropriate by the researcher to ensure confidentiality. Sessions will be one time per week for six weeks. Sessions will be scheduled at your convenience. The first 40 minutes of the session will be learning and practicing MBCT techniques. The final 10 minutes will be completing the PSS and MAAS. At the end of the six sessions, you will be given the option of being referred for counseling, or being completed with you participation. Please understand that participation in the study is not a requirement of your academic program and participation or lack thereof, will not impact your academic standing at UNCP.

### **Risks**

For participants in the study, there are some risks associated with participation in a research study utilizing a counseling intervention.

Psychologically, you may experience uncomfortable moments in sessions that are associated with self-disclosure of personal information. The researcher will also be the session facilitator and is a licensed professional counselor in the state of North Carolina with many years of experience facilitating individual counseling. Confidentiality is paramount and study participants and the researcher will discuss at the first session what will be involved protecting confidentiality. All sessions will be held in a confidential location and participants will be assured that their participation in the study will not be disclosed by the researcher to anyone, including nursing faculty. All participants who express the desire or exhibit the need for counseling after the study will have that made available.

### **Benefits**

You may learn new tools to help cope with stressful situations in your life. You may identify areas of concern and learn about resources available to you that will help you deal with an academic or life problem more efficiently. Other benefits may include the learning of MBCT tools such as acknowledging automatic thoughts, accepting negative thoughts, and MBCT techniques such as meditation.

**Confidentiality**

The data from the PSS and MAAS will be recorded in to an electronic database and computer that only the researcher will have access. All paper copies of the study data will be stored in a locked file cabinet behind two locked doors for a period of seven years at which time it will be destroyed. No reference will be made in oral or written reports which could link you to the study. The demographic information that will be used in study reports will be age range, race, gender, whether a participant has had prior experience with mindfulness, and the length of practice time of mindfulness exercises between sessions. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide.

**Compensation**

You will not receive any compensation for participating.

**What if you have questions about this study?**

If you have questions at any time about the study or the procedures, you may contact the researcher, Mark Schwarze, at the University of North Carolina at Pembroke’s Counseling and Testing Center, at 910-521-6202.

**What if you have questions about your rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact NC State IRB personnel Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), or Carol Mickelson, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515) or UNC-Pembroke IRB personnel Dr. Tim Hayes, IRB Coordinator, PO BOX 1510, Pembroke, NC 28372 (910/522-5785). Please reference IRB#1755 for NCSU or IRB#10-11-002 for UNCP

**Consent To Participate**

“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

**Subject's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Investigator's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

## Appendix B

### Perceived Stress Scale

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

Name \_\_\_\_\_ Date \_\_\_\_\_

Age \_\_\_\_\_ Gender (*Circle*): **M** **F** Other \_\_\_\_\_

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

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

#### References

The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.  
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## Appendix C

### Mindfulness Attention Awareness Scale (MAAS)

Please indicate the degree to which you agree with each of the following items using the scale below. Simply circle your response to each item.

|   | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
|---|------------------|--------------------|------------------------|--------------------------|----------------------|-----------------|
|   | almost<br>always | very<br>frequently | somewhat<br>frequently | somewhat<br>infrequently | very<br>infrequently | almost<br>never |
| 1. I could be experiencing some emotion and not be conscious of it until some time later.                       | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 2. I break or spill things because of carelessness, not paying attention, or thinking of something else.        | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 3. I find it difficult to stay focused on what's happening in the present.                                      | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.   | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.         | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 6. I forget a person's name almost as soon as I've been told it for the first time.                             | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 7. It seems I am "running on automatic" without much awareness of what I'm doing.                               | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 8. I rush through activities without being really attentive to them.  | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 10. I do jobs or tasks automatically, without being aware of what I'm doing.                                    | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 11. I find myself listening to someone with one ear, doing something else at the same time.                     | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 12. I drive places on "automatic pilot" and then wonder why I went there.                                       | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 13. I find myself preoccupied with the future or the past.  | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 14. I find myself doing things without paying attention.  | 1                | 2                  | 3                      | 4                        | 5                    | 6               |
| 15. I snack without being aware that I'm eating.  | 1                | 2                  | 3                      | 4                        | 5                    | 6               |

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## Appendix D

### Demographic Form

**Participant Code:** \_\_\_\_\_

**Classification:**  Freshman  Sophomore  Junior  Senior

**Ethnicity:**  African American  Asian American  Hispanic American  
 International Student  Multi Racial  Native American  White/Caucasian  
 Other \_\_\_\_\_

**Age:** \_\_\_\_\_ **Gender:** \_\_\_\_\_

**Have you ever had any experience or practice with mindfulness activities (ie, meditation, yoga, mindfulness therapy, etc)?**

**Yes** \_\_\_\_\_ **No** \_\_\_\_\_

**If yes, please indicate how much? A lot** \_\_\_\_\_ **Some** \_\_\_\_\_ **A little** \_\_\_\_\_

## Appendix E

### Recruitment Email

My name is Mark Schwarze, and I am a licensed mental health therapist from the UNCP Counseling & Testing Center. I am also a doctoral student in the Counselor Education department at North Carolina State University and am working on my dissertation study focusing on helping nursing students reduce the level of stress they experience in their nursing program. The purpose of this study is to explore the potential effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) taught in individual sessions in reducing self-reported stress and increasing the levels of mindfulness in nursing students.

MBCT involves training the mind to avoid judgmental reactions to events, thoughts, feelings, and body sensations, and to practice nonjudgmental awareness and acceptance. MBCT teaches skills such as breathing techniques, meditation, and cognitive de-centering and has shown promise in reducing stress levels.

I am now recruiting junior and senior nursing students at UNCP to be participants in this study. I am aware that your time is valuable and I want you to know what would be involved should you decide to participate. Study participants will be asked to complete an orientation with the researcher (30 minutes) and complete six 50-minute individual sessions focusing on stress and MBCT. Participants will also complete extremely brief stress and mindfulness surveys weekly to measure self-reported stress and mindfulness levels. Completing these will be part of the 50-minute weekly sessions. Your total amount of time commitment would be approximately 6.5 hours. Additionally, I can hold the sessions in a location and time that is convenient to your schedule. Benefits for participating in the study may include learning skills that will help you manage stress and an increased sense of control over your emotions. Your participation in the study will be confidential, and participating or not participating will have no effect on your standing in the nursing program.

If you would like to participate, please contact Mark Schwarze in the Counseling & Testing Center by email at [mark.schwarze@uncp.edu](mailto:mark.schwarze@uncp.edu) or by phone at 910-521-6202.

Thanks for your consideration of this study.

Mark Schwarze