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Complementary and Alternative Medicine: Current Mind-Body Practices and Perceptions of Undergraduate Students

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Complementary and Alternative Medicine:

Current Mind-Body Practices and Perceptions of

Undergraduate Students

By

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This thesis paper has been examined and approved by the following members of the student's committee.

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Abstract

Current Mind Body Practices and Perceptions of Undergraduate Students.

Julia Putz, M.S. Minnesota State University, Mankato, 2017

The purpose of this study was to evaluate the practices and perceptions undergraduate students have of complementary and alternative medicine. This study also analyzed the purpose in which students use complementary and alternative medicine. A survey was distributed to 450 students attending undergraduate classes at a large Midwestern university. The survey was developed using A Complementary Alternative Medicine Questionnaire for Young Adults by Patterson and Arthur (2009). This survey consisted of 48 questions addressing demographic information, uses of complementary and alternative medicine, mind-body practices and beliefs of complementary and alternative medicine. There was a total of 307 responses; however,14 were eliminated as a result of incomplete responses. The data was analyzed with 293 completed surveys.

There is a high use of certain CAM practices among sampled undergraduate students including, physical activity, breathing techniques, relaxation techniques, massage, and prayer. There were no gender differences in regard to males' and females' beliefs related to CAM. Gender differences were found with mind-body practices including males more likely than females to use movement therapy and females more likely than males to use prayer and yoga.

Recommendations for further research include conducting this study among a broader representation of students.

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Chapter One: Statement of the Problem

Introduction

The purpose of this research was to identify selected undergraduate students' complementary and alternative medicine perceptions and current mind-body practices. In this chapter the background of the problem, statement of the problem and its significance, and research questions are presented. This chapter also includes the limitations, delimitations, and assumptions of the study as well as definitions that were applied to this study.

Background of the Problem

Complementary and alternative medicine (CAM) treatments, such as herbal remedies and acupuncture, are growing in use (National Center for Complementary and Integrative Health [NCCIH], 2016). Because of increasing research on CAM treatments, health care providers are better able to understand the role these alternative therapies play in helping treat and prevent disease (NCCIH, 2016). Despite this increase in research, the purpose for a patient choosing to use CAM remains unclear due to limited scientific evidence regarding the effectiveness of CAM.

Mind and body practices include a vast and diverse group of health procedures and techniques administered or taught by a trained practitioner or teacher (NCCIH, 2016). Researchers conducting the 2012 National Health Interview Survey found that yoga, chiropractic and osteopathic manipulation, meditation, and massage therapy are among the most popular mind and body practices used by adults (NCCIH, 2016).

Mind-body practices use the power of thoughts and emotions to influence physical health (Cleveland Clinic, 2013). The mind-body connection means that a person can learn to use thoughts to positively influence some of the body's physical responses (Cleveland Clinic, 2013). Although phrases such as "mind over matter" have been around for years, only recently have scientists found evidence that mind-body techniques fight disease and promote health (University of Maryland Medical Center, 2011). Mind-body techniques can be helpful for many conditions because they encourage relaxation, improve coping skills, reduce tension and pain, and lessen the need for medication (University of Maryland Medical Center, 2011).

According to researchers conducting the National Health Interview Survey, CAM use in adults in the United States has increased over the last decade. Specifically, CAM use is higher in those with a college education (Nguyen, Liu, Patel, Tahara, & Nguyen, 2016).

Previous researchers have applied CAM to individuals who use it for the purpose of treating illness, but not necessarily disease management and prevention (Mongiovi, Shi, & Greenlee, 2016). The unfortunate reality is that chronic diseases account for 60% of all deaths – corresponding to a projected 36.65 million deaths worldwide in 2007(World Health Organization, 2011). It is estimated that over half of the adult United States population currently has one or more chronic conditions, resulting in an estimated $1,600 in productivity loss annually for each employee with chronic disease(Mongiovi et al., 2016). Previous researchers have suggested that integrating alternative or complementary health approaches with conventional medicine may be beneficial for managing symptoms, lifestyle changes, treatment, physical and psychosocial consequences that result from chronic illness(Mongiovi et al., 2016). By treating an individual as a whole and taking into consideration the "big picture" perspective of care regarding causes, management, and treatment, mind-body medicine can help repair

damage to our bodies (National Institute for the Clinical Application of Behavioral Medicine, 2016).

Statement of the Problem

CAM use gives individuals with chronic disease additional choices for management of their conditions (Oliver-Baxter & Brown, 2014). There is a gap in the literature on how the general public uses CAM. To close this gap, this research will focus on current mind-body practices among selected undergraduate students at Minnesota State University, Mankato. Understanding the reasons for CAM use within this sample will foster a better understanding of how CAM may be utilized for purposes other than treatment.

Research Questions

Three research questions were explored in this study. These questions include:

1. What are college students' perceptions of their health and mind-body practices utilized?
2. Do college students' use of mind body practices and CAM beliefs vary by gender?
3. Are college students' reasons for using CAM associated with their mind-body practices?

Delimitations

Data was collected from undergraduate students on the Minnesota State University, Mankato campus from selected undergraduate courses. Therefore, these results may not be generalized to students at Minnesota State University, Mankato nor students at other colleges and universities. The data collection took place during February 2017.

Limitations

Data collection used self-reported measures; therefore, students may not have indicated their actual use of CAM. Another limitation of this research was use of convenience sampling. Limited health literacy among students may be another limitation. Every student may not have the proper understanding of the terms used in the survey. Statistical limitations may exist with missing data due to participant choice.

Assumptions

The primary assumption of this research is that the students answered all questions honestly and accurately. The second assumption is that students completed the survey in its entirety.

Definition of terms

Acupressure. The application of pressure or localized massage to specific sites on the body to control symptoms such as pain or nausea (Linda, Larson, & Synovitz, 2012).

Acupuncture. A procedure that increases the flow of energy to treat illness or provide local pain relief by the insertion of stainless steel needles at specified sites on the body (Linda et al., 2012).

Allopathic medicine. A system in which medical doctors and other health care professionals (such as nurses, pharmacists, and therapists) treat symptoms and diseases using drugs, radiation, or surgery. Also called biomedicine, conventional medicine, mainstream medicine, orthodox medicine, and Western medicine (Linda et al., 2012).

Alternative medicine. Those medical or health related treatments used as a replacement for western medical practices (such as the use of a special diet to treat cancer rather than surgery or chemotherapy) are known as alternative (Linda et al., 2012).

Aromatherapy. Means 'treatment using scents'; the use of concentrated plant oils (Linda et al., 2012).

Biofeedback. A mind-body intervention that helps train people to control their bodily functions by using their minds. This is done by being connected to electrical sensors that help people visualize information about their bodily functions and thus allow them to learn how to control them (Linda et al., 2012).

Complementary and alternative medicine (CAM). A group of diverse medical and health care systems, practices, and products that are not considered to be part of conventional medicine (Linda et al., 2012).

Holistic. A concept in health care practice proposes that all aspects of people's needs, psychological, physical, mental, emotional and social, should be taken into account and seen as a whole (Linda et al., 2012).

Homeopathic medicine. An alternative approach to medicine based on the belief that natural substances, prepared in a special way and used most often in very small amounts, restore health. According to these beliefs, for a remedy to be effective, it must cause in a healthy person the same symptoms being treated in the patient (Linda et al., 2012).

Integrative medicine. Combines treatments from conventional medicine and CAM for which there is evidence of safety and effectiveness (Linda et al., 2012).

Meditation. Intentional use of posture, concentration, contemplation, and visualization for the purpose of wellbeing (Spencer & Jacobs, 2003).

Mind/Body practices. The interaction between the mind, body, and spirit, specifically the ways in which emotional, mental, social and spiritual factors together can directly affect health (National Institute for the Clinical Application of Behavioral Medicine, 2016).

Naturopathic medicine. A holistic, whole body health care system based on the belief that the body has the potential to heal itself and that the physician's role is to support the body's efforts. A system or method of treating a disease that employs no surgery or synthetic drugs but uses special diets, herbs, vitamins, massage, and so on to assist the natural healing processes (Linda et al., 2012).

National Center for Complementary and Alternative Medicine (NCCAM). A center in the National Institutes of Health that conducts research regarding the effectiveness of complementary and alternative therapies (Linda et al., 2012).

Yoga. Requires full awareness of posture and movements. Attention is focused on the breath during all movements and helps open up the energy channels (Linda et al., 2012).

Summary

The purpose of this research was to determine the current perceptions and practices of CAM among selected undergraduate students on the MNSU-M campus. The review of literature related to this study is provided in the next chapter.

Chapter Two: Literature Review

The purpose of this research was to identify the perceptions and practices of complementary and alternative medicine (CAM) specifically, mind-body practices of selected MNSU, M undergraduate students. In this chapter, literature reviews of mind-body techniques will address the importance of research and evaluation for CAM. This section includes the following topics; definitions and different types of CAM, history of mind-body medicine, demographics and characteristics of CAM users, reasons for CAM use, and health belief model.

Definition and Different Types of CAM

As defined by the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health, CAM is a diverse medical and health care system, not presently considered to be part of conventional medicine (National Institutes of Health, 2013). Mayo Clinic staff further explain that CAM focuses on the whole person and includes physical, emotional, mental and spiritual health (Mayo Clinic, 2014).

Therapies used to complement western medical treatments (such as, use of aromatherapy after surgery) are identified as complementary; those used as a replacement for traditional medical practices (for example, use of a special diet to treat cancer rather than surgery or chemotherapy) are known as an alternative. If someone systematically or purposely combines CAM with conventional medicine, then they would be using integrative medicine. The significant difference between traditional and alternative modalities is that CAM practices accentuate the role of the individual in maintaining his or her health (Linda et al., 2012).

The NCCAM has divided CAM therapies into five categories: (1) alternative medical systems (homeopathic medicine, naturopathic medicine, traditional Chinese medicine, and

Ayurvedic medicine), (2) mind-body interventions (meditation, prayer, mental healing, art, music, or dance), (3) biologically-based therapies (dietary supplements, herbal medicine), (4) manipulative and body-based therapies (chiropractic, osteopathic, massage), and (5) energy therapies (qi gong, Reiki, therapeutic touch, pulsed fields, and magnetic fields). Other examples of CAM therapies include prayer utilized for healing, yoga, hypnosis, biofeedback, and deep breathing exercises (Linda et al., 2012).

Some of the most commonly used mind-body techniques include:

Biofeedback: With biofeedback, people are trained to control certain bodily processes that normally occur involuntarily, such as heart rate or blood pressure. These processes can be measured and displayed on a monitor that the person watches. You can then use this display to gain control over these "involuntary" activities -- lowering your blood pressure, for example. Biofeedback is useful for some conditions, but it is most often used to treat tension headaches, migraine headaches, and chronic pain (University of Maryland Medical Center, para. 7, 2011).

Cognitive behavioral therapy: This technique is used to help people recognize and change unhealthy thoughts. For example, people with phobias might deliberately expose themselves, under the direction and guidance of a therapist, to what they are afraid of. Or individuals who are depressed can learn to counter negative thoughts and feelings with positive ones (University of Maryland Medical Center, para. 8, 2011).

Relaxation techniques: There are three major types of relaxation techniques:

Progressive muscle relaxation: This technique involves slowly tensing and then releasing each muscle group in your body, starting with your toes and finishing with your head (University of Maryland Medical Center, para. 10, 2011).

Meditation: The two most popular forms of meditation in the U.S. are transcendental meditation and mindfulness meditation. In transcendental meditation, students repeat a mantra (a single word or phrase). In mindfulness meditation, students focus their attention on their moment by moment thoughts and sensations (University of Maryland Medical Center, para. 11, 2011).

Hypnosis: During hypnosis, a person's body relaxes while their thoughts become more focused and attentive. In this state of deep concentration, some people are highly responsive to a hypnotherapist's suggestions. Many mental health professionals use hypnosis to treat people with addictions, pain, anxiety disorders, and phobias (University of Maryland Medical Center, para. 12, 2011).

Spirituality: Researchers have been studying how spiritual beliefs, attitudes, and practices affect health. In a recent study in people with human immunodeficiency virus (HIV), those who had faith in God, compassion toward others, a sense of inner peace, and were religious had a better chance of surviving for a long time with acquired immune deficiency syndrome (AIDS) than those who did not have such faith or practices. Research suggests that qualities like faith, hope, and forgiveness, and using prayer and

social support, have a noticeable effect on health and healing (University of Maryland Medical Center, para. 13, 2011).

History of Mind-Body Medicine

Most ancient practices, such as Traditional Chinese Medicine and Ayurvedic medicine, emphasize the links between the mind and the body (University of Maryland Medical Center, 2011). Western medical views were shaped by systems of thought that emphasized the opposite -- the mind and body are separate (University of Maryland Medical Center, 2011). The notion that mind and body were separate began during the Renaissance and Enlightenment eras (National Institutes of Health, 2010). The role of mind and body in health began to re-enter Western care in the 20th century, inspired by discoveries about pain control through the placebo effect and effects of stress on health (National Institutes of Health, 2010).

In 1964, psychiatrist George Solomon noticed that individuals with rheumatoid arthritis worsened when they were depressed. He investigated these emotions' impacts on inflammation and the immune system in general. The new field was called psychoneuroimmunology (University of Maryland Medical Center, 2011). In the 1960s and early 1970s, Herbert Benson, who coined the term "relaxation response," studied how meditation could affect blood pressure (University of Maryland Medical Center, 2011). Increased understanding of the mind-body link came in 1975 when psychologist Robert Ader found that mental and emotional cues could affect the immune system (University of Maryland Medical Center, 2011).

In 1989, Spiegel conducted a clinical study demonstrated the ability of the mind to heal (University of Maryland Medical Center, 2011). Of eighty-six women with late stage breast cancer, half received standard medical care where as the other half received standard care in

addition to weekly support sessions. During these sessions, the women were able to share their grief and their triumphs. Spiegel discovered that the women who participated in the support group lived twice as long as the those who did not. A similar study in 1999 showed that in those with breast cancer, thoughts of helplessness and hopelessness are associated with a lower chance of survival (University of Maryland Medical Center, 2011). The researchers conducting the 2007 National Health Interview Survey found that 19.2% of American adults and 4.3% of children aged 17 and younger had used at least one CAM mind-body therapy in the year before the survey (National Institute of Health, 2013).

Demographics and Characteristics of CAM Users

Data from the 2007 National Health Interview Survey, conducted by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics concluded, almost four out of ten adults (38.3%) had used some CAM in the past twelve months. American Indian or Alaska Native adults (50.3%) and white adults (43.1%) were more likely to use CAM than Asian adults (39.9%) or black adults (25.5%). The CAM therapies most commonly used by United States adults in the past twelve months were nonvitamin, nonmineral, natural products (17.7%), deep breathing exercises (12.7%), meditation (9.4%), chiropractic or osteopathic manipulation (8.6%), massage (8.3%), and yoga (6.1%) (Barnes et al., 2008).

CAM use is higher in those with a college education (Nguyen et al., 2016). The 2012 NHIS reported that 36.5% of those who have had some college education and 42.6% of those with a college degree or higher used CAM within the last year. Studies have reported that 35%-82% of undergraduate college students in the United States use CAM, compared to 33.3% of the general adult population as indicated by the NHIS in 2012. CAM use was also found to be more

prevalent among women, adults aged 30–69, as well as adults with higher levels of education, adults in stable financial environments, adults living in the West, former smokers, and adults who were hospitalized in the last year (Barnes et al., 2008).

Reasons for Use of CAM: Mind-Body Practices

Several mind-body interventions result in measurable physiological responses such as lowered heart rate, blood pressure, and respirations (Linda et al., 2012). Certain emotions have been associated with disease (University of Maryland Medical Center, 2011). For example, hostile attitudes may increase the risk of coronary heart disease, obesity, insulin resistance, and abnormal cholesterol (University of Maryland Medical Center, 2011).

There is no evidence that negative emotions cause disease. Although research shows that being stressed and having negative emotions can be unhealthy (University of Maryland Medical Center, 2011). One study found that unconsciously being defensive may result in medical consequences, such as high blood pressure (University of Maryland Medical Center, 2011).

The goal of mind-body techniques is to get the mind and body to relax to decrease the levels of stress hormones in the body so that the immune system is better able to fight off illness (University of Maryland Medical Center, 2011). Women who participated in a mind/body program for stress reduction while undergoing in vitro fertilization (IVF) treatment had a significantly higher pregnancy rate than those who did not (52% versus 20%) (Domar et al., 2011).

Mind-body techniques can be helpful for many health conditions as they encourage relaxation, improve coping skills, reduce tension and pain, and lessen the need for medication

(University of Maryland Medical Center, 2011). Mind-body techniques may help treat many diseases and conditions, including:

> Cancer, high blood pressure, asthma, coronary heart disease, pain and nausea/vomiting related to chemotherapy, insomnia, fibromyalgia, and mental health issues, such as anxiety and depression (University of Maryland Medical Center, 2011)

Barnes and associates (2008), found that adults used CAM most often to treat a variety of musculoskeletal problems including: back pain or problems (17.1%), neck pain or problems (5.9%), joint pain or stiffness or other joint condition (5.2%), arthritis (3.5%), and other musculoskeletal conditions (1.8%). Research had shown that when a person imagines an experience, he/she often experiences similar physical responses to those had when the event happened (University of Maryland Medical Center, 2011). A variety of mind-body exercises have been proven to result in the following: decrease anxiety, decrease pain, enhance sleep, minimize the use of medication for post-surgical pain, decrease side effects of medical procedures, reduce recovery time and shorten hospital stays, strengthen the immune system, and increase sense of control and well-being (University of Maryland Medical Center, 2011). While mind-body practices are not primarily alternatives to western treatments, they do provide a powerful way for one to participate in personal health care actively and promote recovery (University of Maryland Medical Center, 2011).

Recent results from NIH-funded studies on CAM mind-body therapies include:

- In a study of 60 breast cancer survivors, women who used hypnosis reduced the number and severity of hot flashes and also reported improvements in mood and sleep. (National Institutes of Health, para. 9, 2013).

- A study of 63 people with rheumatoid arthritis found that Mindfulness Based Stress Reduction contributed to improving the quality of life and reduce psychological distress (National Institutes of Health, para. 11, 2013).
- A study of 298 college students found that Transcendental Meditation helped students reduce stress and improve coping strategies (National Institutes of Health, para. 12, 2013).

The goal of these relaxation exercises is to help change the way one perceives a situation and reacts to it by becoming aware of tension, anxiety, change in breathing, or symptoms that one recognizes as being caused by stress (Cleveland Clinic, 2013). The mind, emotions, and attention play a significant role in the experience of pain. Patients with chronic pain, stress, fear, and depression can amplify the perception of pain. Through their thoughts and emotions mind-body approaches can change a person's mental or emotional state or utilize physical movement to train attention or produce mental relaxation (Hassed, 2013).

Perceptions of CAM

Only five universities in the United States offer CAM training, and research suggests that the overall percentage of college students who have been exposed to any CAM subject material is minimal in both undergraduate and professional school levels (Burke, 2008). Also, studies that reported close to 40% of people who completed some college work had used some form of CAM in the past twelve months despite the lack of education on CAM at the undergraduate level (Barnes et al., 2008).

Participants' use of CAM is largely based on perception. A qualitative study which evaluated the perceptions of complementary and alternative medicine among cardiac patients,

reported that participants felt CAM provided holistic care, improved the quality of life, overcame the limitations of conventional medicine, satisfied their increased expectation for comprehensive care, and prevented or counteracted adverse effects caused by traditional medicine (Bahall & Edwards, 2015). Participants reported a lack of scientific information on CAM and stated that policy makers should assist patients in increased research, public health education, and improved integration of CAM and conventional medicine (Bahall & Edwards, 2015). How these perceptions develop will be addressed by applying the health belief model in the following section.

Health Belief Model

The motivations to choose complementary medicine can be evaluated through application of the health belief model. An individual's beliefs and evaluations of an event or concept in the environment influences their behavior towards the environment. A widely used theory in health promotion, the health belief model was found to predict various health behaviors such as individuals' decisions to take preventive actions or choose a particular treatment (Janz & Becker, 1984). There are six primary constructs of the health belief model: perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers, cues to action, and self-efficacy.

The health belief model may help explain why people choose to use CAM. For example, an individual discovers he/she is susceptible to a disease, and may seek CAM as a form of preventative medicine (perceived susceptibility). When a person understands their diagnosis to be serious, they may consider using CAM in addition to conventional treatment (perceived seriousness). If a person believes that CAM use will benefit their health (perceived benefits) either through experience or by other venues, they are exhibiting cue of action if they may

choose to utilize CAM. If one does not have health insurance that covers CAM or the financial means to pay for CAM he/she may see this as a barrier and choose to use conventional medicine. Lastly, if a person believes he/she is capable of following with a particular CAM action (self-efficacy), this would influence their CAM-related behaviors.

Summary

The literature reviewed presented the benefits of CAM use, who uses CAM most often, and potential reasons of why they do. The reviewed literature supports the benefits of CAM to all individuals. The research methods that were used to conduct the study are provided in Chapter Three. This includes the research design, participants, instrumentation, procedure, data collection, data processing, and data analysis.

Chapter Three: Research Methodology

The purpose of this research was to determine the perceptions and practices of mind-body therapies of CAM among selected undergraduate students. The study also investigated if a relationship existed between variables regarding gender and use of CAM practices. A survey was administered to undergraduate students at Minnesota State University, Mankato during scheduled class periods. In this chapter research methods employed in the study are described. These methods include the design of the study, participant selection, instrumentation, procedures, and data analysis.

Research Design

The research collected data using a cross-sectional descriptive and quantitative forty-eight question survey. The survey instrument Complementary Alternative Medicine Questionnaire for Young Adults analyzed three subscales: 1) positive beliefs about CAM; 2) environmental influence; and 3) psychological comfort (Patterson & Arthur, 2009). Participants responded using Likert-type items ranging from strongly disagree (1) to strongly agree (5). The survey was used to collect demographic information, practices within the past twelve months, and perceptions of CAM use. The design of the study allowed for all research questions to be addressed. Perceptions, practices, gender, and attitudes of undergraduate students were evaluated.

Participants

The study was administered to 450 students enrolled in four sections of HLTH 101: Health and the Environment and three sections of HLTH 240: Drug Education. Data collected was from students eighteen years of age and older, attending Minnesota State University,

Mankato, spring semester of 2017. Students could participate in the anonymous survey voluntarily during the beginning or end of the scheduled class period. In person data collection allowed for a high participation rate. The total number of participants included three hundred and seven, although only two hundred and ninety-three surveys were used for analysis due to seven incomplete surveys and seven surveys which included untraditional students who did not fit the scope of research.

Instrumentation

The survey was created using A Complementary Alternative Medicine Questionnaire for Young Adults by Patterson and Arthur (2009). This open access article, which permits unrestricted use, was modified to fit the research questions of the researcher. The CAM Questionnaire assessed respondents' attitudes toward the use of CAM. The 48-item survey (see Appendix A) which includes three demographic questions (age, gender identification, and education level), one perceived health question, four questions related to the use of CAM, two questions related to level of involvement in the use of CAM and CAM providers, 27 questions related to the use of mind-body practices, and eleven questions related to perceptions regarding CAM.

Data Collection Procedures

This research was approved by the Institutional Review Board at Minnesota State University, Mankato (see Appendix B). Classes were selected at convenience based upon instructor's permission to collect data during class time.

Surveys were administered by the researcher to participants in person during selected undergraduate courses offered at various times. A description of the study and consent form (see

appendix C) was read aloud to the students before participation. The participants and nonparticipants were told to place the survey in an envelope located on the lectern at the front of the room. The survey took ten minutes to complete. The survey took ten minutes to complete. Data was stored and accessed on a secured computer.

Data Processing and Analysis

Data was analyzed using Statistical Package for the Social Sciences. The survey questions were assigned a numeric property to determine the relationship between the variables. The scale related to students' beliefs about CAM was created summing the eleven items and dividing by the number of items (i.e., eleven).

Data Analysis

The following includes how the survey instrument was used to address and analyze each research question.

What are college students' perceptions of their health and mind-body?

This research question was analyzed using data from the survey questions 4 to 8 and 10 to 36. The questions addressed perceived health status, and mind-body practices. Descriptive statistics including frequency counts and percentages were used to answer this question.

Do college students' use of mind body practices and CAM beliefs vary by gender?

This research question was analyzed using survey questions 2, 9 to 37 and 38 to 48. Independent sample t-tests and Chi-square analysis were used to answer this question.

Are college students' reasons for using CAM associated with their mind-body practices?

This research question was analyzed using survey questions 5 to 8 and 10 to 36. For this analysis, the students' response for rarely, occasionally and frequently were coded as "use" and compared to "never use"

Summary

The survey instruments developed by Patterson and Arthur (2009) were used to gather the needed data to address the research questions. The variety of questions allowed for the research to investigate descriptive statistics, frequencies, independent sample t-tests, Cronbach's alpha reliability and Chi-Square analysis. The results and conclusions from the data collection are presented in the next chapter.

Chapter Four: Findings and Discussion

This study collected data with the purpose to identify undergraduate student's perceptions and practices of CAM. It also assessed CAM use associated with gender. Statistical Package for Social Sciences was used to analyze descriptive statistics, frequencies, independent sample t-tests, Cronbach's alpha reliability, and Chi-Square analysis. Findings are presented by research question in this chapter.

Demographic Characteristics of the Sample

The demographic characteristics of the sample are provided in Table 4.1. The average age of the study participants was 19.60 years old (SD=1.92). A majority of the sample was female (n = 198, 67.80%) with males making up a smaller percentage (n = 94, 32.10%). Students were asked to provide their highest education level, many of the students reported being in their first year of college (n = 124, 45.10%).

In comparison to Patterson and Arthur (2009) whose population demographics information included the following: the survey was mailed to 1463 students attending university in an urban centre. The response rate was 16% (n = 227). Most survey respondents were female (68%) with a mean age of 19.5 (SD 1.29).

Table 4.1

Demographic Characteristics

Characteristic	n	%	M (SD)
Gender	292		
Male	94	32.20	
Female	198	67.80	
Age	292		19.60 (1.92)
18	78	26.70	
19	103	35.30	
20	59	20.20	
21	23	7.90	
22	11	3.80	
23	6	2.10	
24	5	1.70	
26	2	0.70	
27	1	0.30	
29	1	0.30	
30	3	1.00	
Year in School	275		
High School Graduate	19	6.90	
One Semester of College	124	45.10	
One Year of College	63	22.90	
Two Years of College	38	13.80	
Three Years of College	23	8.40	
Four or More Years	8	2.90	

What are college students' perceptions of their health and mind-body practices utilized?

Students were asked to describe their current health. A majority of students described their health as good (n = 109, 37.20%) or very good (n = 114, 38.90%), with an average of good (3.39) and a standard deviation of (0.89). Perceptions of student's health are provided in Table 4.2. Mind-body practices utilized are found in Table 4.3.

The top five most commonly used mind-body practices among undergraduate students are:

1. Physical Activity (n= 241, 82.50%)
2. Breathing techniques (n = 158, 53.90%)
3. Relaxation Techniques (n = 153, 52.60%)
4. Massage (n = 150, 51.20%)
5. Prayer (n= 144, 49.80%)

In comparison to Patterson and Arthur (2009) the most frequently used mind-body therapies included, massage, yoga, and chiropractic services. It is important to note that physical activity, and prayer were not among the options to be selected in their survey. Vitamins and minerals, as well as, herbal remedies were studied within their research.

Table 4.2

Self-Reported Health

Variable	n	%	M (SD)
Health	293		3.39 (0.89)
Poor	5	1.70	
Fair	40	13.70	
Good	109	37.20	
Very Good	114	38.90	
Excellent	25	8.50	

Table 4.3

Mind Body Practices

Practice	N	n	%
Acupuncture	293	12	4.10
Acupressure	292	7	2.40
Art Therapy	292	29	9.90
Chiropractic	293	95	32.40
Cognitive Behavioral Therapy	291	26	8.90
Breathing Techniques	293	158	53.90
Biofeedback	290	13	4.50
Color Therapy	289	11	3.80
Dance Movement Therapy	292	28	9.60
Guided Imagery	293	19	6.50
Healing Touch	293	13	4.40
Hypnosis	293	11	3.80
Massage	293	150	51.20
Meditation	293	117	39.90
Movement Therapy	293	33	11.30
Music Therapy	292	80	27.40
Osteopathic Manipulation	292	7	2.40
Physical Activity	292	241	82.50
Prayer	289	144	49.80
Qigong	290	2	0.70

Table 4.3 continued

Mind Body Practices

Practice	N	n	%
Relaxation Techniques	291	153	52.60
Spiritual Healing	293	22	7.50
Tai Chi	293	8	2.70
Therapeutic Touch	293	12	4.10
Visualization	293	46	15.70
Yoga	293	125	42.70

Do college students' use of mind body practices and CAM beliefs vary by gender?

The reliability of the perception related questions on the survey were examined using Cronbach's Index of Internal Consistency (see Table 4.4). It was found that the beliefs regarding CAM, had an acceptable Cronbach's alpha reliability coefficient of .89. Independent sample t-tests were used to determine if there were any gender differences with respect to the students' CAM beliefs. There were no significant differences in regards to gender and CAM beliefs (see Table 4.5). In comparison to Patterson and Arthur (2009) females had the most positive attitude towards CAM.

Chi-square analysis was used to determine if there were any gender differences with respect to the students' use of mind-body practices. Statistical significance was found with gender differences in three mind-body practices (see Table 4.6). It was found that males (n = 17, 18.19%, $\chi^2 = 6.63$) are more likely to use movement therapy than females (n = 16, 8.19%). Females utilize prayer more often than males, (n = 108, 54.80%, $\chi^2 = 5.80$) compared to (n = 36, 39.60%). Finally, yoga was found to be more popular among females (n = 100, 50.50%, $\chi^2 = 14.88$) than males (n = 25, 26.60%).

Table 4.4

Cronbach's Index of Internal Consistency (α) for Beliefs about CAM

Scale	*n* of Items	M (SD)	*α*
Beliefs About CAM	11	3.72 (0.52)	0.89

Table 4.5

Independent Sample t-test Comparing Mean CAM Belief Score by Gender

Scale	Male M (SD)	Female M (SD)	t-value
	3.65 (0.47)	3.76 (0.54)	-1.67

Table 4.6

Frequency Distributions (n), Percentages (%), and Chi-Square Value for Crosstabulations of Males and Females use of Mind Body Practices

Mind Body Practice Used	Males		Females		χ^2
	Yes	No	Yes	No	
	n %	*n %*	*n %*	*n %*	
Movement Therapy	17 (18.10)	77 (81.90)	16 (8.10)	182 (92.90)	6.36*
Prayer	36 (39.60)	55 (60.40)	108 (54.8)	89 (45.20)	5.80*
Yoga	25 (26.60)	69 (73.40)	100 (50.50)	98 (49.50)	14.88**

***p <.05.* ***p< .01.*

Are college students' reasons for using CAM associated with their mind-body practices?

Chi-square analysis was used to determine whether individuals use of 27 specific mind-body strategies, were associated with their reasons for using CAM. The reasons for CAM use are found in Table 4.7.

The proportion of individuals who said they use CAM to prevent illness used breathing techniques (n = 116, 65.20%, χ^2 =21.96), was greater than the proportion of people who said they never used breathing techniques to prevent illness (see Table 4.8). The proportion of individuals who said they use CAM to prevent illness used massage (n = 104, 58.40%, χ^2 = 8.75), was greater than the proportion of people who said they never used massage to prevent illness (see Table 4.8). The proportion of individuals who said they use CAM to prevent illness used prayer (n = 101, 57.10%, χ^2 = 10.76) was greater than the proportion of people who said they never used prayer to prevent illness (see Table 4.8). The proportion of individuals who said they use CAM to prevent illness used relaxation techniques (n = 111, 62.40%, χ^2 = 16.61), was greater than the proportion of people who said they never used relaxation techniques to prevent illness (see Table 4.8). The proportion of individuals who said they use CAM to prevent illness used yoga (n = 96, 53.90%, χ^2 = 24.51), was greater than the proportion of people who said they never use yoga to prevent illness (see Table 4.8).

The proportion of individuals who said they use CAM to treat illness used breathing techniques (n = 117, 66.90%, χ^2 = 38.08), was greater than the proportion of people who said they never use CAM to treat illness (see Table 4.8). The proportion of individuals who said they use CAM to treat illness used massage (n = 106, 60.60%, χ^2 = 14.43), was greater than the proportion of people who said they never used massage to treat illness (see Table 4.8). The

proportion of individuals who said they use CAM to treat illness used physical activity (n = 150, 86.20%, $\chi^2 = 3.90$), was greater than the proportion of people who said they never use CAM to treat illness (see Table 4.8). The proportion of individuals who said they use CAM to treat illness used prayer (n = 98, 56.30%, $\chi^2 = 8.38$), was greater than the proportion of people who said they never use prayer to treat illness (see Table 4.8). The proportion of individuals who said they use CAM to treat illness used relaxation techniques (n = 111, 63.40%, $\chi^2 = 19.72$), was greater than the proportion of people who said they never used breathing techniques to treat illness (see Table 4.8).

The proportion of individuals who said they use CAM to promote health used breathing techniques (n = 132, 60.60%, $\chi^2 = 14.54$), was greater than the proportion of people who said they never use CAM to promote health (see Table 4.8). The proportion of individuals who said they use CAM to promote health used prayer (n = 115, 53.00%, $\chi^2 = 4.03$), was greater than the proportion of people who said they never use CAM to prevent illness (see Table 4.8).

Table 4.7

Chi-square analysis: Reasons for Using CAM

	Never		Rarely		Occasionally		Frequently	
Reason	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Prevent Illness	111	38.40	83	28.70	65	22.50	30	10.40
Treat Illness	114	39.40	66	22.80	80	27.70	29	10.00
Promote Health	72	24.80	56	19.30	94	32.40	68	23.40
Other	141	65.00	25	11.50	23	10.60	28	12.90

Table 4.8 *Chi-square analysis: Frequency of Mind Body Practice use per Purpose*

Type of CAM	Prevent Illness	Treat Illness	Promote Health
	n (%)	*n* (%)	*n* (%)
	χ^2	χ^2	χ^2
Breathing techniques	116 (65.20)	117 (66.90)	132 (60.60)
	21.96**	38.08**	14.54**
Massage	104 (58.40)	106 (60.60)	
	8.75**	14.43**	
Prayer	101 (57.10)	98 (56.30)	115 (53.00)
	10.76**	8.38**	4.03*
Relaxation Techniques	111 (62.40)	111 (63.40)	
	16.61**	19.72**	
Yoga	96 (53.90)		
	24.51**		
Physical Activity		150 (86.20)	
		3.90*	

*p <.05. **p< .01.

Summary

There is a high use of certain CAM practices among sampled undergraduate students including, physical activity, breathing techniques, relaxation techniques, massage, and prayer. Students view their health as primarily good. There were no gender differences in regards to beliefs of CAM. Significance was found with gender differences in mind-body practices. Males were more likely than females to use movement therapy whereas females were more likely than males to use prayer and yoga.

Reasons for using CAM to prevent illness are associated with breathing techniques, massage, prayer, relaxation techniques, and yoga. Reasons for using CAM to treat illness are associated with breathing techniques, massage, physical activity, prayer, and relaxation techniques. Reasons for using CAM to promote health are associated breathing techniques, and prayer. Conclusions, discussion and recommendations are presented in Chapter Five.

Chapter Five: Conclusions, Discussion, and Recommendations

People have used CAM practices for thousands of years in pursuit of health and well-being (National Institutes of Health, 2017). This study asked participants about use of mind body practices and beliefs of CAM. Perceptions were determined through the use of descriptive statistics and frequencies. It also identified relationships with gender and use of mind body practices. The relationships were analyzed using the bivariant correlation to determine if any associations existed in this study. Lastly, this study determined the reasons for use of mind body practices among undergraduate students.

Conclusions

Participants in this study were undergraduate students enrolled at Minnesota State University, Mankato. Participants completed the items on a survey related to their use of mind body practices and beliefs regarding CAM. The CAM beliefs questions were Likert type items ranging from strongly disagree (1) to strongly agree (5). No gender differences in regards to beliefs of CAM were found. The top five most commonly used mind-body practices among undergraduate students were: physical activity, breathing techniques, relaxation techniques, massage, and prayer. Females were more likely to use yoga and prayer more than males, whereas males were more likely to participate in movement therapy than females. The use of breathing techniques and prayer were found to be associated with reasons of using CAM for preventing illness, treating illness, and promoting health among undergraduate students.

Discussion

The researcher was unable to identify strong statistical relationships between gender and beliefs of CAM. This does not align with previously stated research regarding gender differences

with respect to CAM beliefs. Further research is needed to determine if this finding is similar in students attending college in a similar setting.

There may be several reasons for the disparity in results between this current study and prior research. The most common CAM therapies reported in this sample were physical activity, breathing techniques, and relaxation techniques. Exercise and yoga courses are offered at the university studied, so this may explain why they were listed as top practices. There were strong associations with specific mind body practices such as movement therapy, yoga and prayer, with gender. The low reported numbers could be a result of the data collection in classes with many freshmen and sophomore students at the end of their class time, as they may have other commitments following the selected class. The unknown relationships of gender and CAM beliefs leads to several questions and suggestions for future studies.

The researcher investigated CAM frequencies among undergraduate students. There was a high use of physical activity (n = 292, 82.50%) and breathing techniques (n = 293, 53.90%) by the students. The study investigated undergraduate students reported purpose for CAM use: prevention of illness, treatment of illness, and promotion of health. Students primarily use CAM to promote health (n = 290, 32.40%) (see Table 4.7) in comparison to other listed reasons. This study demonstrated the purpose of CAM use and its preferred practice as well as distinct links between various purposes of CAM use.

Recommendations

It is recommended to replicate this study to determine if religious affiliations or ethnicity influence students' use of CAM. Income as well as other barriers may also influence CAM use by college students. Based on this study's findings, it is suggested to add questions to better

understand the knowledge of CAM in relation to their CAM-related beliefs and their use of CAM.

It is also recommended to move the belief section to the beginning of the survey to encourage responses. Another recommendation is to administer the survey to more upper division courses to allow for a more diverse population. Administering the survey strictly at the beginning of the scheduled class period may also allow for an increased response rate. It is highly suggested to provide an incentive to participate to increase participation rates. An increased response rate would have allowed for a representative size for this research. The findings trigger several questions regarding student's beliefs toward their own health as well as their beliefs toward CAM. Future investigation is needed to understand why students choose not to use CAM.

For health educators, it is recommended to educate undergraduate students about the positive benefits of CAM. This program could include educating and promoting CAM through gender specific wellness programs.

References

Bahall, M., & Edwards, M. (2015). Perceptions of complementary and alternative medicine among cardiac patients in South Trinidad: A qualitative study. BMC Complementary and Alternative Medicine, 15, 99. http://doi.org/10.1186/s12906-015-0577-8

Barnes, P. M., Bloom, B., & Nahin, R. L. (2008). Complementary and alternative medicine use among adults and children: The United States, 2007. Retrieved from https://www.cdc.gov/nchs/data/nhsr/nhsr012.pdf

Burke, A. (2008). Characteristics of college students enrolled in an alternative health/complementary and alternative medicine course: A cross-sectional comparison. Explore (New York, N.Y.), 5(1), 45–50. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/19114263

Cleveland Clinic. (2013). Mind-body exercises. Retrieved from Cleveland Clinic, http://my.clevelandclinic.org/services/heart/prevention/emotional-health/stress-relaxation/mind-body-exercises

Domar, A. D., Rooney, K. L., Wiegand, B., Orav, E. J., Alper, M. M., Berger, B. M., & Nikolovski, J. (2011). The impact of a group mind/body intervention on pregnancy rates in IVF patients. Fertility and Sterility, 95, 2269–2273. doi:10.1016/j.fertnstert.2011.03.046

Hassed, C. (2013). Mind-body therapies--use in chronic pain management. Australian Family Physician. 42, 117. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/23529519

Janz, N.K., Becker, H. (1984). The health belief model: A decade later. Health Education & Behavior, 11: 1–47. doi:10.1177/109019818401100101.

Linda, S., Larson, K. L., & Synovitz, L. B. (2012). Complementary and alternative medicine for health professionals: A holistic approach to consumer health. Sudbury, MA, United States: Jones and Bartlett Publishers.

Liu, M. A., Huynh, N.-T., Broukhim, M., Cheung, D. H., Schuster, T. L., & Najm, W. (2014). Determining the attitudes and use of complementary, alternative, and integrative medicine among undergraduates. The Journal of Alternative and Complementary Medicine, 20, 718–726. doi:10.1089/acm.2014.0041

Mayo Clinic Staff. (2014). Complementary and alternative medicine definition. Retrieved from http://www.mayoclinic.org/tests-procedures/complementary-alternative-medicine/basics/definition/prc-20021745?reDate=30112016

Mongiovi, J., Shi, Z., & Greenlee, H. (2016). Complementary and alternative medicine use and absenteeism among individuals with chronic disease. BMC Complementary and Alternative Medicine, 16(1). doi:10.1186/s12906-016-1195-9

National Center for Complementary and Integrative Health. (2016). Complementary, alternative, or integrative health: What's in a name? Retrieved from https://nccih.nih.gov/health/integrative-health

National Institute for the Clinical Application of Behavioral Medicine. (2016). Mind/body medicine and the future of healing. Retrieved from https://www.nicabm.com/programs/mindbody/

National Institutes of Health. (2010). Mind-body medicine practices in complementary and alternative medicine and alternative medicine: fact sheet-mind-body medicine practices in complementary and alternative medicine. Retrieved from https://report.nih.gov/nihfactsheets/Pdfs/MindBodyMedicinePracticesinComplementaryandAlternativeMedicine(NCCAM).pdf

National Institutes of Health. (2017). NIH fact sheets - Complementary and alternative medicine. https://report.nih.gov/NIHfactsheets/ViewFactSheet.aspx?csid=85

Nguyen, J., Liu, M. A., Patel, R. J., Tahara, K., & Nguyen, A. L. (2016). Use and interest in complementary and alternative medicine among college students seeking healthcare at a university campus student health center. Complementary Therapies in Clinical Practice, 24, 103–108. doi:10.1016/j.ctcp.2016.06.001

Oliver-Baxter, J., & Brown, L. (2014). Complementary medicine use in chronic disease: What is the evidence? Retrieved from http://www.phcris.org.au/phplib/filedownload.php?file=/elib/lib/downloaded_files/publications/pdfs/phcris_pub_8405.pdf

Patterson, C., & Arthur, H. (2009). A complementary alternative medicine questionnaire for young adults. Integrative Medicine Insights, 4, 1–11.

Spencer, J. W., & Jacobs, J. J. (2003). Complementary and alternative medicine: An evidence-based approach (2nd ed.). United States: Mosby International.

University of Maryland Medical Center. (2011). Mind-body medicine. Retrieved from http://umm.edu/health/medical/altmed/treatment/mindbody-medicine

World Health Organization. (2011). Face to face with chronic disease. Retrieved from http://www.who.int/features/2005/chronic_diseases/en/

Appendixes

Appendix A

Complementary and Alternative Medicine: Survey of Mind-Body Practices and Perceptions

Part A: Information About You

Directions: Please respond to the following questions. If you have additional comments about a specific question,
print them in the space provided at the end of the question or questionnaire.

1. What is your age? _____ Years (Please write your age in the space provided)

2. What is your gender (Please circle appropriate response)

   a. male b. female c. other identification

3. What highest level of education that have you **completed**? Please **check one**:

   ☐ a. High School Graduate

   ☐ b. One Semester of College/University

   ☐ c. One Year of College/University

   ☐ d. Two Years of College/University

   ☐ e. Three Years of College/University

   ☐ f. Four or More Years of College/University

4. In general, would you describe your health? Please **check one box:**

   ☐ a. Poor

   ☐ b. Fair

   ☐ c. Good

   ☐ d. Very Good

   ☐ e. Excellent

Part B: Use of Complementary and Alternative Medicine

Definitions and Examples

Complementary Medicine is treatments that are used along with standard medical treatments but are not considered to be standard treatments. One example is using acupuncture to help lessen side effects of migraines treatment.

Alternative Medicine is treatments that are used instead of standard medical treatments. One example is using a special diet to treat chronic stomach diseases instead of medications that are prescribed by a physician.

Examples of Complementary and Medicine: Chiropractic, Yoga, Meditation, Music Therapy, Physical Activity, and Prayer

Survey Continues on Next Page

Directions: Listed below are a number of statements concerning your use of complementary and alternative medicine (CAM). For each statement, circle the number that corresponds most closely to your use of CAM. **Please circle only one number for each of the four statements:**

I have used CAM:	**I Have Never Used CAM**	**Rarely**	**Occasionally**	**Frequently**
5. To prevent illness.	0	1	2	3
6. To treat illness.	0	1	2	3
7. Promote health.	0	1	2	3
8. For other reasons: Please explain:	0	1	2	3

9. Which of the following statements best describes your level of involvement with a CAM provider? **Please check one box.**

☐ a. I do not use CAM

☐ b. I use CAM only

☐ c. I use CAM with other treatments given to me by medical doctor

Directions: Listed below are a mind-body practices. Identify whether or not you use or have used the practice in the past **twelve months**. **Please check one box for each practice.**

Mind-Body Practices I Use or Have Used in the Past 12 Months						
Mind-Body Practice	No	Yes		Mind-Body Practice	No	Yes
10. Acupuncture				23.Meditation		
11. Acupressure				24. Movement Therapy		
12. Art Therapy				25. Music Therapy		
13. Chiropractic				26. Osteopathic Manipulation		
14. Cognitive behavioral therapy				27. Physical Activity		
15. Breathing Techniques				28. Prayer		
16. Biofeedback				29. Qigong		
17. Color Therapy (also known as chromotherapy or light therapy)				30. Relaxation Techniques		
18. Dance Movement Therapy				31. Spiritual Healing		
19. Guided Imagery				32. Tai Chi		
20. Healing Touch				33. Therapeutic Touch		
21. Hypnosis				34. Visualization		
22. Massage				35. Yoga		

36. Other Mind-Body Techniques I Use Include:

_____

Survey Continues on Next Page

37. Which of the following statements best describes your level of involvement with a CAM provider? **Please check one box.**

☐ a. I do not see CAM providers

☐ b. I see CAM providers on a daily basis

☐ c. I see CAM providers on a weekly basis

☐ d. I see CAM providers on a monthly basis

☐ e. I see CAM providers once a year

☐ f. I see CAM providers less than once a year

☐ g. Other (please explain) _____

Part C: Beliefs About Complementary and Alternative Medicine (CAM)

Directions: Listed below are a number of statements concerning your beliefs about CAM use. For each statement, **circle the number** that corresponds most closely to your belief. **Please circle only one number for each of the following statements.**

Belief About Complementary and Alternative Medicine (CAM)	**Strongly Disagree**	**Disagree**	**Neither Disagree or Agree**	**Agree**	**Strongly Agree**
38. CAM providers give good information on maintaining a healthy lifestyle.	1	2	3	4	5
39. Young adults would be more likely to use CAM if there were more CAM clinics.	1	2	3	4	5
40. Young adults are more empowered when using CAM because CAM providers involve them in decisions about their health care treatments.	1	2	3	4	5
41. Young adults believe that CAM builds up the body's own defenses and promotes self-healing.	1	2	3	4	5
42. The more knowledge a young adult has about CAM, the more likely he/she is to use it.	1	2	3	4	5
43. Parent(s) and family can influence a young adult's CAM use by exposing them to it.	1	2	3	4	5
44. Young adults are more likely to use CAM if their friends are using it.	1	2	3	4	5
45. Young adults are more likely to use CAM if coaches and teachers discuss it with them.	1	2	3	4	5
46. Young adults who believe in the physical, mental and spiritual aspects of health are more likely to use CAM.	1	2	3	4	5
47. Young adults who fear the discomfort of treatments from medical doctors are more likely to use CAM	1	2	3	4	5
48. Young adults would be more likely to use CAM is insurance covered their participation in CAM.	1	2	3	4	5

The survey is completed

Appendix B

January 31, 2017

Dear Marlene Tappe, PhD:

Re: IRB Proposal entitled "[1020844-2] Complementary and Alternative Medicine: Mind-Body Practices and Perceptions of Selected Undergraduate Students"
Review Level: Level *[I]*

Your IRB Proposal has been approved as of January 31, 2017. On behalf of the Minnesota State University, Mankato IRB, we wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the Associate Vice-President of Research and Dean of Graduate Studies immediately.

The approval of your study is for five calendar years from the approval date. When you complete your data collection or should you discontinue your study, you must submit a Closure request (see http://grad.mnsu.edu/irb/continuation.html). All documents related to this research must be stored for a minimum of three years following the date on your Closure request. Please include your IRBNet ID number with any correspondence with the IRB.

The Principal Investigator (PI) is responsible for maintaining signed consent forms in a secure location at MSU for 3 years following the submission of a Closure request. If the PI leaves MSU before the end of the 3-year timeline, he/she is responsible for following "Consent Form Maintenance" procedures posted online (see http://grad.mnsu.edu/irb/storingconsentforms.pdf).

Sincerely,

Mary Hadley, Ph.D.
IRB Coordinator

Jennifer Veltsos, Ph.D.
IRB Co-Chair

Julie A. Carlson

Julie Carlson, Ed.D.
IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Minnesota State University, Mankato IRB's records.

Appendix C

SURVEY CONSENT

You are requested to participate in research on undergraduate students' perceptions and use of mind-body practices as a part of complementary and alternative medicine. This study is conducted by graduate student Julia Putz and supervised by Dr. Marlene Tappe. The purpose of this research is to identify undergraduate students perceptions of complementary and alternative medicine and their current use of mind-body practices (e.g., massage). If you have any questions about the research, please contact Dr. Marlene Tappe at marlene.tappe@mnsu.edu.

Participation is voluntary and the survey is anonymous. It will take about 10 minutes to complete the survey. When you have completed the survey you will place it in an envelope on the lectern located at the front of the room. You may refuse to participate in the study without penalty or loss benefits. You may also stop taking the survey at any time without penalty or loss of benefits. If you choose to not participate place the blank survey in envelope on the lectern located at the front of the room. If after you have started to complete the survey and decide to end your participation, please put an 'X' through each page and place your survey in the envelope on the lectern located at the front of the room. Participation or nonparticipation will not impact your relationship with Minnesota State University, Mankato. If you have questions about the treatment of human participants and Minnesota State University, Mankato, contact the IRB Administrator, Dr. Barry Ries, at 507-389-1242 or barry.ries@mnsu.edu.

Responses will be anonymous. The risks you will encounter as a participant are no more than experienced in daily life. There are no direct benefits to you for participating in this study. Society might benefit by increased understanding of college students' perceptions and use of complementary and alternative medicine.

Submitting the completed or partially completed survey will indicate your informed consent to participate and indicate your assurance that you are at least 18 years of age.

Please keep this page for your future reference.

MSU IRBNet ID# 1020844

Date of MSU IRB approval: 1/31/2017