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Massage Therapy for Anxiety and Depression

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Table of Contents

Abstract

Background: Massage therapy is a proven method for reducing symptoms of anxiety and depression as evidenced through literature review. However, the practice of complementary and integrative modalities (CIM), such as massage, is uncommon within psychiatric care. This leaves a gap in practice in the psychiatric setting. *Purpose:* The capstone quality improvement project addressed the identified gap by providing education on massage therapy to mental health providers and clients, and by increasing massage accessibility and use in the outpatient psychiatric setting by providing education on performing self-massage. *Methods:* The education was provided via pre-recorded video. Clients/providers completed pre and post-assessments addressing beliefs, knowledge, and attitudes regarding massage therapy; its use for symptom management; and the practice of self-massage. Descriptive statistics were used to analyze the pre and post-data to provide average scores and percent change in values. *Results:* Sixteen clients and three providers participated, with a 50% and 100% return rate, respectively. There was an increase in beliefs, knowledge, and attitudes regarding massage therapy in all areas measured. The most improvement in scores was noted for items assessing client knowledge of massage contraindications (109.5% change), confidence in ability to perform massage (45.5% change), and knowledge of the benefits of massage (42.1% change). Both clients and providers were motivated regarding the use of massage as a treatment modality as indicated by high pre and post-assessment scores for this item. *Conclusion:* The findings are favorable in terms of effectiveness of provided education, and also align with the prior understanding of positive receptivity to CIM. Further exploration and implementation of themes incorporating CIM into psychiatric treatment are warranted.

 Keywords: psychiatry, massage therapy, depression, anxiety, stress, CIM, mental health

Massage Therapy for Anxiety and Depression

Introduction

It has been shown that the integration of Complementary and Alternative Modalities (CIM) into community mental health practice is promising for the enhancement of mental health outcomes and improving quality of life for individuals under psychiatric care (Collinge et al., 2015). However, psychiatric care within the United States is largely predicated upon the use of allopathic treatment, which typically consists of psychopharmacology and psychotherapy. The use of CIM as treatment is both undervalued and underutilized, despite the willingness of over 50% of those with mood or anxiety disorder to seek and use such treatments (Lake & Turner, 2017). There is adequate literature demonstrating the positive effects of various forms of CIM for treatment of psychiatric disorders such as anxiety and depression. In a 2012 study by the Bravewell Collaborative, it was shown that complementary and integrative therapies are beneficial as part of the treatment plan for psychiatric disorders, with depression and anxiety among the five major health issues for which CIM is shown to impart the most benefit (Horrigan et al., 2012). However, the incorporation of CIM such as massage therapy into the standard treatment plan remains uncommon. Utilizing treatments such as massage therapy in the psychiatric setting could improve patient outcomes by reducing symptoms and increasing patient satisfaction.

Problem Statement

The need for increased use of complementary and integrative modalities (CIM), such as massage therapy, for individuals with depression and anxiety is indicated by inadequate symptom management with the use of more conventional treatment options, including psychopharmacology. These standard modalities also typically have more associated risks and side effects than CIM. This situation results from limited knowledge regarding CIM and its

efficacy to reduce symptoms and improve overall quality of life. The DNP capstone project translated the evidence supporting one form of CIM, massage therapy, in the care of individuals with depression and anxiety through the creation of an educational module for psychiatric clients and providers.

Background

Anxiety and Depression

To better understand the importance of improving psychiatric care practices surrounding treatment of anxiety and depression, it is necessary to discuss how significant these disorders have become as health issues within our society. The World Health Organization (2016) shows that between the years 1990 and 2013, the number of individuals worldwide with symptoms of depression and/or anxiety increased by almost 50% from 416 million to 615 million with costs to the global economy of over $1 trillion yearly. Most recently these numbers have increased further due to the Coronavirus disease (COVID-19) pandemic and its global impact on patients and the healthcare system (Druss, 2020). The current health pandemic lends itself to heightened levels of worry, which can worsen current levels of depression and anxiety, and as Druss (2020) states, psychiatric patients need effective care now more than ever.

Anxiety can manifest and present in a variety of ways and comprise multiple mental health diagnoses, such as Generalized Anxiety Disorder (APA, 2013). According to Perese (2012), anxiety disorders are a major source of distress and impaired functioning and are associated with heightened levels of morbidity and mortality. Those suffering from anxiety can encounter difficulties in relationships, work, school and other important areas as they often encounter difficulties in carrying out normal tasks (APA, 2013). The National Alliance on Mental Illness (2017a) indicates that 40 million or 19.1% of adults in the United States have an

anxiety disorder. Total direct medical expenditures related to anxiety were estimated to be $33.71 billion dollars in 2013 and continue to rise (Shirneshan, 2013).

Depression, the other mental health disorder addressed here, is the primary cause of disability for those aged 15 to 44 within the United States (Kessler, 2012). It can often occur concurrently with anxiety and rivals its burden with detrimental effects on society, family and the individual. These effects include impaired functioning, decreased quality of life, loss of income, detrimental marital effects, impaired child development, and increased use of medical services (Tusaie & Fitzpatrick, 2017). As of 2017 over 17 million adults in the United States had experienced at least one depressive episode in the past year (National Alliance on Mental Illness, 2017c). The American Psychological Association indicates that in 2013 the cost of treating depressive disorders within the United States totaled 71 billion dollars, making depression the 6th most costly health condition after diabetes mellitus, ischemic heart disease, low back and neck pain, hypertension, and injuries due to falls (Winerman, 2017).

Complementary and Integrative Modalities

Clearly, anxiety and depression are paramount issues deserving of comprehensive treatment. Lake and Turner (2017) identify the necessity of a collaborative care model that incorporates complementary modalities into the overall patient plan of care. They state that those with mental health diagnoses who use CIM "feel strongly that such nonpharmacologic treatments improve their physical, emotional, cognitive, social, and spiritual functioning; reduce the severity of their symptoms; and enhance overall wellness" (Lake & Turner, 2017, p. 19). Complementary and integrative modalities, which include laying on of hands, massage therapy, hypnosis, aromatherapy, acupuncture, reflexology, prayer, Emotional Freedom Technique (EFT), Thought Field Therapy (TFT) and guided imagery, have demonstrated benefit in the treatment of

psychiatric symptoms and are more likely to be utilized by those with psychiatric disorders than by those with other diseases (Mamtani & Cimino, 2002). The numbers of those utilizing complementary and integrative modalities along with conventional treatment has increased over the past several years (National Alliance on Mental Illness, 2017b). Given that CIM users personally find such interventions beneficial to their mental health and overall wellness, incorporation of CIM into the care plan should be a fair consideration.

However, CIM has been given little credit within allopathic medicine. This is due in part to multiple misconceptions that surround the use of CIM, such as CIM are anecdotal or lacking in evidence. Other misconceptions regarding CIM include the beliefs that not many people utilize CIM practices, that CIM practices are only utilized if conventional modalities are ineffective, and that CIM is itself largely ineffective (Tusaie & Fitzpatrick, 2017). These incorrect assumptions regarding CIM prevent their integration into the mental health care setting.

In addition to these misconceptions surrounding CIM, there are additional factors that affect its utilization, such as inaccessibility. Contributing to this is lack of affordability, as many CIM treatments such as massage therapy come with a significant cost that is not covered by insurance. According to the organization Associated Bodywork and Massage Professionals (2019), a national consumer survey conducted by Harstad Strategic Research (a leading public survey firm), found that in 2018 only 18% of American adults used CIM in the form of massage therapy. The primary reason offered by 38% of respondents for not utilizing massage services was the expense (ABMP National Consumer Survey, 2019).

With numerous barriers to its success, assimilating CIM into behavioral healthcare can be challenging. Doing so involves significant research demonstrating its efficacy and contribution to positive patient outcomes. Successful integration also involves education of the mental health

practitioner regarding CIM, networking with local CIM providers, making appropriate referrals, and client education (Tusaie & Fitzpatrick, 2017).

Massage Therapy

The form of CIM known as massage therapy, which falls under the umbrella term of touch therapy, is a promising addition to patient care as there has been research showing positive patient outcomes through its implementation including stress reduction, pain relief, increased relaxation and reduction of anxiety and depression (Tusaie & Fitzpatrick, 2017). Massage therapy can either be taught to healthcare staff through the institution of a training program, or it can be offered through the employment of licensed massage therapy providers. Massage therapy can also be taught to clients who can learn to perform self-massage in situations where they are unable to access such treatments from a licensed professional. In a 2018 national survey of massage therapy providers, it was found that self-massage was the most commonly shared health promotion topic between massage therapists and clients. In addition, the highest proportion of referrals made by massage therapists was for mental health services (Munk, 2019). The survey findings highlight the pertinence of self-massage education for mental health clients due to the direct correlation between those seeking massage services and high referral rate to mental healthcare providers.

Organizational "Gap" Analysis of Project Site

In order to screen for the above mentioned gaps in clinical practice, a NEEDS assessment was performed within a psychiatric private practice in Massachusetts (see *Appendix A* for gap analysis). The client population ranged across the lifespan, but for the purpose of this DNP Project, the adult population was the focus. A PROCEED approach was utilized. The first stage of this approach was in assessing the wants and needs of this particular community for

improving overall quality of life. These wants and needs were examined retrospectively through anecdotal evidence ascertained by the practice psychiatrist and through discussions by the psychiatrist with clients on the topic (K. Mallory, personal communication, November 14, 2019). Through these interactions it was determined that significant numbers of clients within the practice feel that complementary and integrative modalities would be a beneficial component of their psychiatric care. Of particular interest were the modalities of energy work and body work (including massage therapy). Clients were largely drawn to CIM due to the high levels of stress that they continuously face. Understanding that stress is a major risk factor in the development of illness, both physical and mental, and that the evidence supports the stress-reducing benefits of CIM (Tusaie & Fitzpatrick, 2016), we see how CIM can help to fulfill the gap in clients' care. In addition, outside findings have shown that 43% of those with anxiety disorders and 53% of those with depression already utilize one or more forms of CIM treatment (Lake & Turner, 2017), and it would therefore be prudent to incorporate such treatments into the psychiatric care setting.

Through this assessment, objectives for care were outlined as follows: 1) address the gap in care by incorporating CIM into the psychiatric clinical setting through client/provider education; 2) increase massage therapy accessibility and utilization in the outpatient psychiatric setting by providing education on performing self-massage.

Review of the Literature

A search of the literature regarding the use of CIM to address mental health conditions was conducted using the following databases: CINAHL Complete, APA PsychInfo, and Academic Search Premier. The following term combinations were used within all three databases: "massage" and "anxiety," "massage" and "depression," "touch" and "anxiety" and "touch" and "depression." Inclusion criteria included full text, peer reviewed journals only,

published in English, and those that were published between the years 2000 and 2020." The searches amongst all three databases yielded a total of 886 results.

These results were reviewed for their subject matter as a variety of research was yielded, including much on the use of massage therapy for pain and for cancer patients. Articles that most clearly focused on anxiety and depression as primarily psychological issues and not as a symptom of a physiological condition were selected. Articles reflecting the results on outcomes for specific diagnoses such as cancer, heart disease, and end stage renal disease were excluded, as were those that focused on a modality for a specific population such as pediatric or infant massage. After factoring in these exclusions and eliminating repeat results, there were a total of fifteen articles selected.

Of the articles selected for the literature review, the overall rating of evidence was high. All but five were randomized controlled studies (RCTs), which rank as level I evidence according to the *John Hopkins Evidence Based Practice Levels of Evidence* (Newhouse et al., 2005). The evidence also included a single blind experimental study (Akca et al., 2015), and a mixed method experimental study (Coakley et al., 2016), which also rank as level I evidence. Remaining were a pilot prospective non-randomized intervention study (Garner et al., 2008), and a quasi-experimental study with repeated measures (Rexilius et al., 2002), which rank at level II. Finally, the results included one observational study (McMillan et al., 2018), which classifies at the level III rating of evidence (Newhouse et al., 2005).

Evidence Based Practice

There was strong evidence within this review that massage therapy can be a valuable tool in the treatment of depression. Positive findings regarding the use of massage therapy for treatment of depression were found in the RCTs by Poland et al. (2013), and Lee and Yeun

(2007), with $p \leq 0.005$ and $p = 0.001$ in each. A RCT by Moghaddasifar et al. (2018) investigated the use of multisensory stimulation on depression and anxiety; treatment included the tactile intervention of ten-minute hand massages over the period of four weeks. Results showed a statistically significant decrease in depression scores by 4.4 ($p > 0.001$). Another RCT examining the effects of sleep and touch therapy on symptoms of fibromyalgia and depression showed that massage on fibromyalgia pressure points along with the use of music and aromatherapy, reduced Beck Depression Index scores significantly with $p = 0.01$ (Demirbağ & Erci, 2012). The study by Field et al. (2004), demonstrated the effectiveness of massage therapy for symptoms of depression and anxiety ($p < 0.001$). They also showed changes in levels of key neurotransmitters involved in the pathogenesis of depression including higher levels of dopamine and serotonin and decreased levels of cortisol and norepinephrine following massage. Finally, a 2020 RCT by Bahrami et al., which compared the use of reflexology massage to aromatherapy for treatment of depression and anxiety in hospitalized older women, showed significant positive results with reflexology. Although there was a significant reduction in symptoms of depression and anxiety in both groups, reflexology ($p = 0.001$) was shown to have a better effect than aromatherapy as measured by the hospital anxiety and depression scale.

The overall findings for the use of massage therapy for the treatment of anxiety were very promising. The most commonly used measurement tool amongst the reviewed studies was the State Trait Anxiety Inventory (STAI), or an adaption thereof, with similar findings noted amongst the following studies: Utilizing chair massage, Diego et al., showed anxiety on the STAI with $p < 0.001$ after the first session and $p < 0.05$ after the last session. Black et al. (2010), had similar results with chair massage with improvements on state and trait anxiety with $p < 0.001$. Coakley et al. (2016) also noted improvements to the STAI with the use of therapeutic

touch with p = 0.000. The RCT by McMillan et al. (2018), demonstrated the efficacy of Swedish massage for anxiety through the STAI with p = 0.002. Through the use of therapeutic massage garner et al. (2008) also measured improvements in anxiety through implementation of the STAI. Significant improvement was noted post intervention with p < 0.001. Also measured in this study were heart rate and cortisol levels, with positive findings (p < 0.05) for both. The study by Yücel et al. (2019) was another with positive improvements noted through the STAI with p = 0.001. However, the intervention differed from the other studies in that it specifically utilized hand massage in the intervention group, as opposed to a more generalized form of massage such as therapeutic massage or chair massage. The results of this study were telling as they demonstrate that massage even in localized regions of the body can have significant effects on mental wellbeing, as did the studies by Moghaddasifar et al. (2018) and Bahrami et al. (2020) discussed above.

     Although the STAI was used to measure anxiety in most of the studies reviewed, alternate measurement tools such as the Hamilton Anxiety Rating Scale (HAM-A) were also used. The HAM-A was the measurement tool used in the study by Sherman et al. (2010), which examined the use of massage therapy for anxiety in those with a specific diagnosis of Generalized Anxiety Disorder. A measurable improvement in scores was noted with p <0.001.

     Two additional studies of interest examined the effects of touch on the anxiety levels of nursing students (Akca et al., 2015) and on the caregivers of patients undergoing autologous hematopoietic stem cell transplant (Rexilius, 2002). Findings were positive in both groups with p <0.001 in the first, and p = 0.004 in the second. Finally, outside of the original review of literature was a 2016 study that utilized Spielberg's State Anxiety Inventory Questionnaire in a single blind controlled clinical trial which measured the effect of slow stroke back massage for

new mothers. Results showed a significant difference in anxiety levels immediately following

treatment, as well as the morning following treatment (Jahdi et al., 2016). The variety of

statistically significant studies shows that there are various forms of massage therapy that have

positive effects on both depression and anxiety.

Theoretical Framework

Betty Neuman's Systems Model (*Appendix B*) was selected as a guiding theory for the

DNP project primarily due to its holistic viewpoint (Neuman & Fawcett, 2011). This model

views the patient from a multidimensional perspective and considers the individual a "system"

that is comprised of physiological, psychological, socio-cultural, developmental, spiritual, and

basic structural components (Tusaie & Fitzpatrick, 2016). Wellness exists when the parts of the

individual's system interact in harmony with the system as a whole, and the system needs are

being met. Massage therapy can effect positive changes in multiple aspects of the system,

including the physiological, psychological and spiritual dimensions. Although we focus on the

psychological dimension here, it is precisely the interconnection between the dimensions that

results in improvement in overall wellness when positive changes are made in a specific

dimension. One cannot improve a single facet of the system without having positive wellness

outcomes for the individual as a whole. The psychological dimension of the system involves the

individual's mental process and their interaction with the environment. Because the system is an

open one, it is therefore in constant interaction with the outside environment. Through this

interaction, the individual's lines of defense can be compromised by various stressors, which act

to disrupt the balance of the system, leading to illness.

Stress is the body or mind's non-specific reaction to a demand that is placed upon it

(Freese & Lawson, 2017). The concept of stress is a large component of Neuman's theory and is

a measurable factor in massage treatment. Stressors may be intrapersonal, interpersonal, or extra-

personal (Neuman & Fawcett, 2011), and massage can be utilized as a treatment of the psychological aspect of stress. Neuman's theory also looks at prevention, which consists of three levels: primary, secondary and tertiary. As a secondary prevention method, massage aims to reduce the symptoms of anxiety and depression through its mitigating effects on the impact of stressors. Tertiary prevention acts to reduce the residual stressor effects and return the patient to wellness following treatment such as with psychopharmacology (Neuman & Fawcett, 2011). Therefore, Neuman's theory helps to guide the development of this project based on the underlying benefit of massage therapy on stress reduction and the holistic management of health.

Methods

Goals and Objectives and Expected Outcomes

The overarching goal of the Capstone project was to promote CIM in the psychiatric practice setting. The primary objectives of this project were to: a) increase client and provider understanding of the benefits of massage therapy and its use for treatment of anxiety and depression; b) increase client understanding of, and comfort in performing self-massage; and c) to increase provider motivation in educating patients about the use and benefits of massage therapy in the treatment of anxiety/depression. The anticipated outcomes to each objective were: a) improvement in provider and client survey responses between pre-education survey and post-education survey scores, which measured items such as usefulness of massage therapy for treatment of anxiety and depression, benefits of massage therapy, and contraindications of massage therapy; b) improvement in confidence in utilizing/performing self-massage is anticipated from the client survey scores; and c) an increase in scores regarding provider motivation in educating clients in use of massage therapy for anxiety/depression.

Project Site and Population

The site for project implementation was a psychiatric private practice in Massachusetts that services over 200 clients across the lifespan. Providers working at the practice include a psychiatrist, a licensed clinical social worker, a registered nurse, and two administrative staff members. Current services at the location include nutritional testing; group, individual, and in-home therapy; functional medicine; hormonal imbalance screenings; and medication management. The psychiatric providers within the practice were in favor of CIM and were supportive of implementation of the proposed Capstone Project, and a letter addressing project support was issued. The educational session was conducted by the DNP student, who is also a licensed massage therapist in the state of Massachusetts.

Ethical Considerations/Protection of Human Subjects

The University of Massachusetts, Amherst (UMass) Human Research Protection Office reviewed the DNP project prior to implementation and determined it be exempt as it did not meet the definition of human subject research (*Appendix C)*. The participants of this project were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). HIPAA legally prevents those involved in patient care or responsible for handling patient information from sharing or disclosing protected patient information. The practice setting for this project acted to protect patient information from disclosure through carefully implemented policy and conscientious handling of patient information.

Through the implementation of this project and data collection measures, patient information was also carefully handled by the DNP student. Patients participated confidentially and no identifying patient information was disclosed through project implementation or data analysis. There were no identified risks to patients or providers participating in the project.

Paperwork with any identifying information was kept in a locked file cabinet and any electronic records were password protected.

Implementation

Implementation of the DNP project followed a quality improvement design through the use of an educational intervention. Given that the identified need of the practice site, in relation to the problem statement, was the lack of CIM interventions available as mental health treatment, education on the use of massage therapy for treatment of anxiety and depression and the use of self-massage was provided. Both individuals suffering from anxiety and/or depression and mental health providers participated in the project by engaging in the educational session outlined below and completing pre and post-education surveys. (Please refer to *Appendix D* for the cost-benefit analysis and *Appendix E* for this DNP project timeline).

Measurement Instruments

The outcomes of this DNP project were measured through the use of student developed, anonymous, independent client and provider pre-education and post-education surveys administered through the virtual survey platform, Qualtrics (https://qualtrics.com).

1. The client pre-education survey measured client beliefs, knowledge, and attitudes regarding approaches to management of symptoms and the use of self-massage. It was comprised of nine Likert-type questions based on values strongly agree to strongly disagree. Items included beliefs held regarding massage therapy as a form of symptom management; initial knowledge about massage and its benefits; and client comfort in performing self-massage. A post-education survey was administered following the provided education and addressed the same nine questions as well as one additional question regarding the overall quality of the education (*Appendix F*).

2. The provider pre-education survey was similar, but at five questions was shorter in

    length and focused on the benefits and contraindications of massage therapy as well

    as its effectiveness in treating anxiety and depression. The survey also used Likert-

    type questions based on values strongly agree to strongly disagree. An additional

    question assessed provider motivation in providing massage therapy education to

    clients. The provider post-education survey was identical to the pre-education survey

    (*Appendix G*).

Video Intervention

The educational video was pre-recorded by the DNP student using Zoom

(https://zoom.us) and presented the benefits of massage therapy and its use for the treatment of

depression and anxiety. The video was 56 minutes in length and included a comprehensive self-

massage session covering a variety of self-massage techniques including, but not limited to

laying on of hands; and head, hand and foot massage. The video content followed research

performed by the DNP student regarding massage therapy and its use as a treatment intervention

for anxiety and depression. Techniques presented utilized a combination of personal knowledge

on the part of the DNP student/massage therapist and information obtained from *Healing Self-*

Massage: Over 100 Simple Techniques for Re-energizing Body and Mind (Weber, 2005).

Data Collection Procedures

Pre-intervention. The first step in project implementation involved planning with the

office staff and psychiatrist at the practice. Multiple virtual synchronous Zoom meetings took

place between spring and fall of 2020 and consisted of project planning and implementation

overview. Inclusion criteria to participate in the QI project as a client required that participants

be at least eighteen years of age and be undergoing treatment for depression and/or anxiety. If an

individual had any co-occurring diagnoses such as schizophrenia, or substance abuse, those diagnoses had to currently be well managed with no active symptoms present. Clients with active psychosis, or a history of trauma that would make massage therapy treatment potentially triggering, were excluded from the project. The participants needed to be considered medically stable to be included in the educational component and could not have a diagnosis that substantially affected their cognitive functioning, such as autism. Client charts were reviewed for inclusion criteria and discussion took place with the practice providers as to which clients were appropriate for massage therapy intervention. After the pre-selection process was completed, qualifying client participants were sent an invitation letter via the practice email (*Appendix H*). Clients confirming their interest following invitation were then sent the link for the Qualtrics client pre-education survey via email. Participating providers of the practice were emailed the link to the Qualtrics provider pre-education survey.

   Intervention. Once a participant completed the pre-education survey (provider or client), they were sent the link to view an educational video via Vimeo (https://vimeo.com). The same video was presented to both clients and providers and consisted of one session just under an hour in length. Accompanying the video was a participant educational brochure covering the subjects discussed in the video (*Appendix I*). Participants were encouraged to utilize self-massage techniques as often as desired, but at a minimum of 1-2 times per week.

   Post-intervention. A link to the Qualtrics client post-education survey was emailed to participating clients along with the link for the educational video. The same was done with the Qualtrics provider post-education surveys for participating providers. All participants were asked to complete the post-education surveys immediately following their viewing of the educational video through Vimeo.

Data Analysis

Due to sample size, descriptive statistics were used to analyze survey data. Pre and post-assessment scores were entered into table format in Excel. Each question on the five point Likert scale was assigned a number from one through five, with a one indicating "strongly disagree" and being the least desirable response, and a five indicating "strongly agree," which was the most desirable response. The mean scores were calculated for each of the responses and percentage change between pre and post-assessment scores were calculated. In addition, the percentage of participants who agreed, or strongly agreed, with survey statements were compared between pre- and post education survey results. Calculations were completed to compare the client surveys and provider surveys individually. Improvement in participant self-reported beliefs, knowledge and attitudes was indicated by an increase in mean score, whereas a decline, or no change in these areas was indicated by a decrease, or no change in mean score. Increase in percentage of participants agreeing, or strongly agreeing with statements was another way of showing overall improvement in perceived beliefs, knowledge and attitudes, whereas a decrease in this percentage indicated a decline in these.

Results

Project implementation took place between January and March of 2021 at a psychiatric outpatient private practice in Western Massachusetts. Sixteen clients participated initially by completing the client pre-education survey, while a total of only eight client participants completed the client post-assessment for a 50% return rate. Three providers, identified as a psychiatrist, a licensed clinical social worker, and a registered nurse completed the provider pre-education survey and all three also completed the post-assessment.

Client Surveys

Average client pre-assessment scores were calculated and compared with average post-assessment scores. The percentage change was calculated (See *Table 1* below).

Table 1

Comparing Client Pre and Post-Education Scores

Client Question	Average Pre-Assessment Score	Average Post-Assessment Score	Percent Change
Knowledge of use of massage therapy for symptom management	3.2	4.9	53.1%
Agreement as to effectiveness of massage therapy for symptom management	4.2	4.9	16.7%
Knowledge of overall benefits of massage therapy	3.4	4.8	41.2%
Knowledge of contraindications of massage therapy	2.1	4.4	109.5%
Comfort with idea of performing self-massage	4	4.8	20%
Desire in using massage therapy as form of symptom management	4.6	4.9	6.5%
Interest in incorporating self-massage into routine	4.2	4.9	16.7%
Confidence in ability to perform self-massage	3.3	4.8	45.5%
Belief that massage will be effective in management of anxiety/depression	4.1	4.9	19.5%

| Educational session was informative regarding use of self-massage for management of anxiety/depression | N/A | 4.9 | N/A |

Per the average scores of pre and post-assessments as listed in *Table 1*, there was

improvement in client knowledge, attitudes, and beliefs in every area measured. Average scores

in the pre-assessment ranged from 2.1 to 4.6 and increased to 4.4 to 4.9 in the post-assessment.

The percent change ranged from 6.5% to 109.5%, the greatest of which involved client

knowledge of massage therapy contraindications. The least change from 4.6 to 4.9 average

scores with a percent change of 6.5% involved the desire to use massage therapy as a form of

symptom management. This was primarily due to a high initial score, which was more or less

expected based on the gap analysis that demonstrated motivation of mental health clients to

utilize CIM treatment. The final question which addressed the quality of the provided education

was available on the post-assessment only and shows a high average rating of 4.9. Please see

Table 2 below for an analysis of client percentage agreement, or percentage of respondents

agreeing (Likert score of 4) or strongly agreeing (Likert score of 5) to the presented statements.

Table 2

Client Percentage Agreement Mean and Range of Likert Scale Scores Pre and Post-Education

	Pre-education		Post-education	
Client Question	Agreement (% of agree or strongly agree)	Mean Likert scale score (range)	Agreement (% of agree or strongly agree)	Mean Likert scale score (range)
Knowledge of use of	50%	3.2 (1-5)	100%	

massage therapy for symptom management				4.9 (4-5)
Agreement as to effectiveness of massage therapy for symptom management	81.25%	4.2 (3-5)	100%	4.9 (4-5)
Knowledge of overall benefits of massage therapy	56.25%	3.4 (1-5)	100%	4.8 (4-5)
Knowledge of contraindications of massage therapy	6.25%	2.1 (1-4)	87.5%	4.4 (3-5)
Comfort with idea of performing self-massage	81.25%	4 (2-5)	100%	4.8 (4-5)
Desire in using massage therapy as form of symptom management	93.75%	4.6 (3-5)	100%	4.9 (4-5)
Interest in incorporating self-massage into routine	81.25%	4.2 (2-5)	100%	4.9 (4-5)
Confidence in ability to perform self-massage	50%	3.3 (1-5)	100%	4.8 (4-5)
Belief that massage will be effective in management of anxiety/depression	81.25%	4.1 (3-5)	100%	4.9 (4-5)
Educational session was informative regarding use of self-massage for management of anxiety/depression	N/A	N/A	100%	4.9 (4-5)

Those clients either agreeing or strongly agreeing to statements ranged from 6.25% pre-

assessment in regard to knowledge of massage contraindications, to 93.75%, which indicated

desire to use massage therapy as a form of symptom management. Agreement that massage

therapy is effective for symptom management, comfort with the idea of performing self-massage,

and interest in incorporating self-massage into routine were also initially higher than expected at

81.25%. All post-assessment responses were 100% agreement indicating that all respondents

agreed or strongly agreed with the statements following the education except for the question

regarding contraindications, which had increased to 82.5% agreement on the post-assessment.

The tenth question that appeared only on the post-assessment had 100% of respondents agreeing

or strongly agreeing that the educational session was informative regarding the use of self-

massage for the management of anxiety/depression.

Provider Surveys

The initial four questions of the provider survey were the same as the first four questions

of the client survey. The fifth question assessed provider motivation in educating clients on the

benefit and use of massage therapy as a form of symptom management. Please see *Table 3*

below.

Table 3

Comparing Provider Pre and Post-Education Scores

Provider Question	Average Pre-Assessment Score	Average Post-Assessment Score	Percent Change
Knowledge of use of massage therapy for symptom management	4	5	25%
Agreement as to effectiveness of massage therapy for symptom management	4.7	5	6.4%

Knowledge of overall benefits of massage therapy	4	5	25%
Knowledge of contraindications of massage therapy	3.7	5	35.1%
Motivation in educating clients on use/benefit of massage therapy for symptom management	4.7	5	6.4%

Provider pre-education scores were initially fairly high with the lowest average score of

3.7 for knowledge of massage therapy contraindications. With an average score of 4.7, providers

indicated that they were already motivated to educate clients on the use massage therapy for the

treatment of anxiety and depression. All provider post-assessment scores were 5 for all five

questions indicating an overall improvement. *Table 4* will demonstrate these scores in terms of

percentage of providers agreeing or strongly agreeing to statements both pre and post-

assessment.

Table 4

Provider Percentage Agreement Mean and Range of Likert Scale Scores Pre and Post-Education

	Pre-education		Post-education	
Provider Question	Agreement (% of agree or strongly agree)	Mean Likert scale score (range)	Agreement (% of agree or strongly agree)	Mean Likert scale score (range)
Knowledge of use of massage therapy for symptom management	66.7%	4 (4-5)	100%	5 (4-5)

Agreement as to effectiveness of massage therapy for symptom management	100%	4.7 (4-5)	100%	5 (4-5)
Knowledge of overall benefits of massage therapy	66.7%	4 (2-5)	100%	5 (4-5)
Knowledge of contraindications of massage therapy	66.7%	3.7 (2-5)	100%	5 (4-5)
Motivation in educating clients on use/benefit of massage therapy for symptom management	100%	4.7 (4-5)	100%	5 (4-5)

Pre-education, provider agreement ranged from 66.7% for knowledge of the use of massage therapy for management of anxiety/depression, and knowledge of the benefits and contraindications to massage therapy; to 100% for agreement as to the effectiveness of massage therapy as a form of symptom management and motivation in educating clients on the use and benefit of massage for anxiety/depression. For the post-assessment there was a 100% agreement to all questions, demonstrating effectiveness of the provided education.

Discussion

The goal of the DNP project was to promote CIM in the form of massage therapy within the psychiatric clinical setting through education on massage therapy benefits, its use for treatment of anxiety/depression, and self-massage techniques. The anticipated outcome was an improvement in provider and client survey responses which measured knowledge, attitudes, and beliefs surrounding the material presented, and indeed there was an improvement in client scores for all areas measured. Percent agreement was also noted to increase in all areas. The final item on the client post-assessment only, which examined the quality of the education itself, was rated

highly at 4.9 with 100% of client participants agreeing or strongly agreeing to the item. Provider

scores also improved. Although providers demonstrated higher pre-assessment scores overall, the

final scores of all items were rated at a five (strongly agree) amongst providers which also

indicated a 100% agreement. Therefore, it can be concluded that anticipated outcomes were met.

A notable finding was the high score for the items assessing client desire in using

massage therapy as a form of treatment. Given that this score was significantly high pre-

assessment at a 4.6 average with 93.75% agreement, there was only a small margin for

improvement in post-assessment scores. The items regarding agreement in effectiveness of

massage therapy demonstrated a similar trend. These findings align with the previously

discussed gap analysis where it was determined that clients felt strongly that CIM would be a

beneficial component of their psychiatric care. Likewise, these areas confirm the data provided

by Lake and Turner (2017) that indicates that a significant percentage of individuals suffering

from anxiety and depression utilize one or more forms of CIM as treatment.

The measurement of the project outcomes did not examine the actual effectiveness of

massage therapy for improvement in anxiety and depression as the literature review was utilized

to demonstrate this. Therefore, we cannot discuss symptom reduction in terms of an outcome

measure, but instead show that amongst clients and providers in the examined population, there

is a strong perception that massage therapy is in fact an effective form of treatment. This

perception is in turn validated by the current body of evidence, while likewise confirming the

findings by Lake and Turner (2017) that show that those with mental health diagnoses have

strong beliefs regarding the effectiveness of non-pharmacologic treatment.

As previously mentioned, the belief in efficacy of CIM experienced by those with mental

health diagnoses pertained to effectiveness in all dimensions of health (psychological, physical,

emotional, cognitive, spiritual, and social) (Lake & Turner, 2017). This belief lends itself to a

holistic model of care as outlined within Neuman's Systems Theory (Neuman & Fawcett, 2011).

Through the use of massage therapy and its proven effectiveness as a stress management tool, we

see positive outcomes in the treatment of anxiety and depression, which lead to overall improved

wellness of the individual (system). We can see how it is precisely this aspect of massage

therapy that attests to its use as a complementary treatment where its effects on the physical, as

well as psychological dimensions of health, lead to positive effects on all other dimensions and a

strengthening of the individual's lines of defense (refer to *Appendix B)*. It can therefore be an

effective adjuvant to other forms of treatment such as psychotherapy. Through the

implementation of the DNP project, we see evidence of client/provider understanding of this as

well as improvement in knowledge regarding the effectiveness and use of massage therapy as a

form of treatment.

The pre-existing beliefs surrounding the importance of CIM were the main facilitator of

this project both in terms of utilization of the practice site and recruitment of participants. Clients

that participated in the project tended to have pre-inclinations towards the use of CIM as a

treatment measure. This could also be seen as a barrier as a true assessment as to the

effectiveness of the education would be broader and include more participants who might not be

so inclined towards massage therapy initially.

Limitations

Although there were a number of participants interested in participating in the project due

to its subject matter, this was not enough to garner significant participation. A major limitation of

the project was the small sample size. Although sixteen client participants completed the pre-

assessment, only eight of these followed through with the educational intervention and

completion of the post-assessment. Three providers within the practice completed the entirety of

the project (pre-assessment, education, and post-assessment). The project was limited to one

practice site and could potentially have been significantly larger if additional practice sites had

been recruited.

A major barrier to recruitment included the inaccessibility to recruit face to face due to

the Covid-19 Pandemic. The pandemic was also a barrier in terms of the deliverance of the

education, which was also virtual as opposed to in person. As Druss (2020) states, the

Coronavirus disease (COVID-19) pandemic has caused a global impact on patients and the

healthcare system. Patients are no longer able to access the standard level of care that was

previously available and are now faced with the institution of virtual care, especially in the

psychiatric setting. With face to face education, the post-assessments would have been

completed immediately following the education as they would have been distributed by paper

and personally collected by the DNP student. This would have been an extra measure in ensuring

their completion. Given that the surveys were taken anonymously via the virtual platform,

Qualtrics, there was no way to track individual survey responses. As the sample size was small,

it would have been more effective to compare individual pre and post-assessment scores rather

than evaluating group totals. With the current method of evaluation, it is impossible to know if

the post-assessment participants were those who had rated the items in the pre-assessment more

favorably.

Recommendations for Future Study

Recommendations for the expansion and improvement of this project in the future would

be to provide face to face education and to track individual survey responses. In addition, for the

expansion of evidence indicating the effectiveness of self-massage, it would be beneficial to have

participants rate their symptoms utilizing the Depression Anxiety Stress Scale (DASS) initially

and then at incremental points over a period of several weeks of practicing self-massage. The

main purpose of the DASS is identification of point of emotional disturbance as well as

assessment of severity of core symptoms. The DASS is used widely both by researchers and

clinicians looking to assess one's current state of change in state over time. This tool has been

shown to carry a high degree of internal consistency within a variety of settings (Lovibond,

2018). The DASS would be an ideal evaluation tool as it examines all mental health related items

considered relevant in terms of treatment with massage therapy as evidenced through the

literature review. This would give a greater understanding as to the effectiveness of the education

and use of self-massage for symptom management. A final recommendation would be to expand

the sample size by recruiting from multiple psychiatric practices and implementing the project

with clients and providers from those practices rather than focusing on only one location.

Conclusion

Literature has shown that complementary and integrative modalities such as massage

therapy can be effective in treating mental health disorders such as anxiety and depression.

Through gap analysis it was also found that many community mental health clients are eager to

utilize CIM in their path to wellness. Unfortunately, CIM is seldom utilized as part of the

treatment plan. The capstone quality improvement project was developed to help address this gap

by providing education on massage therapy to mental health providers and clients, and by

increasing massage accessibility and utilization in the outpatient psychiatric setting by providing

education on performing self-massage. Results showed positive increases in all areas measured.

The findings are favorable in terms of effectiveness of provided education, and also align with

the prior understanding of positive receptivity to CIM treatment. The implications of these

findings are that CIM, such as massage therapy, are positively received by individuals with psychiatric disorders and perceived as an effective treatment measure for anxiety and depression. Due to the literature demonstrating the efficacy of massage therapy for these psychiatric disorders, and the demonstrated desirability of such treatment, integration of CIM into the psychiatric treatment setting is fully warranted. This project demonstrated a way in which this can be done through education on a treatment method that can be self-implemented by individuals suffering from anxiety and depression. Further education is warranted and can be provided amongst psychiatric treatment facilities and programs to increase awareness of available treatment options and educate clients with mental health disorders on how to utilize massage therapy as a complementary treatment method.

References

ABMP National Consumer Survey. (2019, May/June). *Massage and Bodywork*, 34(3), 64–65.

American Psychiatric Association (APA) (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM5),* (5th ed.): Washington D.C.

Akca, N. K., Arslan, E., Baser, M., & Kuzucu, E. G. (2015). The effect of touching for level of anxiety and skills to advanced practice of nursing students. *International Journal of Caring Sciences*, *8*(1), 52–58.

Bahrami, T., Rejeh, N., Heravi-Karimooi, M., Davood Tadrisi, S., & Vaismoradi, M. (2020). Reflexology versus aromatherapy massage for relieving anxiety and depression in hospitalized older women: A randomized clinical trial. *International Journal of Caring Sciences*, *13*(1), 610–619.

Black, S., Jacques, K., Webber, A., Spurr, K., Carey, E., Hebb, A., & Gilbert, R. (2010). Chair massage in treating anxiety in patients withdrawing from psychoactive drugs. *The Journal of Alternative and Complementary Medicine*, *16*(9), 979-987. https://doi-org.silk.library.umass.edu/10.1089/acm.2009.0645

Coakley, A. B., Barron, A.M., & Donahue Annese, C. (2016). Exploring the experience and impact of therapeutic touch treatments for nurse colleagues. *Visions: The Journal of Rogerian Nursing Science*, *22*(1), 4–16.

Collinge, W., Wentworth, R., & Sabo, S. (2005). Integrating complementary therapies into community mental health practice: An exploration. *The Journal of Alternative and*

Complementary Medicine, *11*(3), 569-574. https://doi-

org.silk.library.umass.edu/10.1089/acm.2005.11.569

Demirbağ, B. C., & Erci, B. (2012). The effects of sleep and touch therapy on symptoms of

fibromyalgia and depression. *Iranian Journal of Public Health*, *41*(11), 44–53.

Diego, M. A., Field, T., Hernandez-Reif, M., Shaw, J. A., Rothe, E. M., Castellanos, D., &

Mesner, L. (2002). Aggressive adolescents benefit from massage therapy. *Adolescence*,

37(147), 597-607.

http://search.ebscohost.com.silk.library.umass.edu/login.aspx?direct=true&db=psyh&AN

=2002-08367-011&site=ehost-live&scope=site

Druss, B.G. (2020). Addressing the COVID-19 pandemic in populations with serious mental

illness. *JAMA Psychiatry.* https://doi.org/10.1001/jamapsychiatry.2020.0894

Field, T., Diego, M. A., Hernandez-Reif, M., Schanberg, S., & Kuhn, C. (2004). Massage

therapy effects on depressed pregnant women. *Journal of Psychosomatic Obstetrics &

Gynecology*, *25*(2), 115-122.

https://doi.org.silk.library.umass.edu/10.1080/01674820412331282231

Freese, B., & Lawson, T. (2017). *Systems model.* Nurse Key. https://nursekey.com/systems-

model/

Garner, B., Phillips, L., Schmidt, M., Markulev, C., O'Connor, J., Wood, J., & McGorry, D.

(2008). Pilot study evaluating the effect of massage therapy on stress, anxiety and

aggression in a young adult psychiatric inpatient unit. *Australian & New Zealand Journal

of Psychiatry*, *42*(5), 414-422.

http://search.ebscohost.com.silk.library.umass.edu/login.aspx?direct=true&db=ccm&AN

=105654497&site=ehost-live&scope=site

Herman, P. M., Poindexter, B. L., Witt, C. M., & Eisenberg, D. M. (2012). Are complementary

therapies and integrative care cost-effective? A systematic review of economic

evaluations. *BMJ open*, *2*(5), e001046. https://doi.org/10.1136/bmjopen-2012-001046

Horrigan, B., Lewis, S., Abrams, D., & Pechura, C. (2012). Integrative medicine in America:

How integrative medicine is being practiced in clinical centers across the United States.

The Bravewell Collaborative, Feb, 2012.

Jahdi, F., Mehrabadi, M., Mortazavi, F., & Haghani, H. (2016). The effect of slow-stroke back

massage on the anxiety levels of Iranian women on the first postpartum day. *Iranian Red

Crescent medical journal*, 18(8), e34270. https://doi.org/10.5812/ircmj.34270

Kessler, R.C. (2012). The costs of depression. *The Psychiatric clinics of North America*, *35*(1),

1–14. https://doi.org/10.1016/j.psc.2011.11.005

Kitch, M. (2016). Cost-effectiveness analysis of complementary and alternative medicine in

treating anxiety disorders. *Alternative and Integrative Medicine,* 5(3), 1-9.

https://doi.org/10.4172/2327-5162.1000218

Lake, J., & Turner, M.S. (2017). Urgent need for improved mental health care and a more

collaborative model of care. *The Permanente Journal.* 21, 17-24.

https://doi.org/10.7812/TPP/17-024

Lee, Y. M., & Yeun, Y. R. (2017). Effects of combined foot massage and cognitive behavioral

therapy on the stress response in middle-aged women. *Journal of Alternative &

Complementary Medicine*, *23*(6), 445-450. https://doi-

org.silk.library.umass.edu/10.1089/acm.2016.0421

Lovibond, P. (2018, July 26). Overview of the DASS and its uses. Retrieved from

http://www2.psy.unsw.edu.au/dass/over.htm

Mamtani, R., & Cimino, A. (2002). A primer of complementary and alternative medicine and its

relevance in the treatment of mental health problems. *Psychiatric Quarterly*, *73*(4), 367–

381. https://doi-org.silk.library.umass.edu/10.1023/A:1020472218839

McMillan, K., Glasser, D., & Radovich, P. (2018). The effect of massage on pain and anxiety in

hospitalized patients: An observational study. *MEDSURG Nursing*, *27*(1), 14-19.

http://search.ebscohost.com.silk.library.umass.edu/login.aspx?direct=true&db=ccm&AN

=128049901&site=ehost-live&scope=site

Moghaddasifar, I., Fereidooni, M. M., Fakharzadeh, L., & Haghighi, Z. M. H. (2018).

Investigating the effect of multisensory stimulation on depression and anxiety of the

elderly nursing home residents: A randomized controlled trial. *Perspectives in*

Psychiatric Care, *55*(1), 42–47. https://doi-org.silk.library.umass.edu/10.1111/ppc.12285

Munk, N. (2019, March/April). Health promotion messaging in massage therapy practice.

Massage and Bodywork, 34(2), 44-49.

National Alliance for Mental Illness. (2017a). *Anxiety Disorders.* https://www.nami.org/About-

Mental-Illness/Mental-Health-Conditions/Anxiety-Disorders/

National Alliance for Mental Illness. (2017b). *Anxiety Disorders Treatment.*

https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Anxiety-

Disorders/Treatment

National Alliance for Mental Illness. (2017c). *Depression.* https://www.nami.org/About-Mental-

Illness/Mental-Health-Conditions/Depression

National Center for Complementary and Integrative Health. (2019). *Massage therapy: What you*

need to know. https://www.nccih.nih.gov/health/massage-therapy-what-you-need-to-

know

Neuman, B. M., & Fawcett, J. (2011). *The Neuman systems model*. (5th ed.). Pearson.

Newhouse, R., Dearholt, S., Poe, S., Pugh, L.C., & White, K. (2005). *The Johns Hopkins Nursing Evidence-based Practice Rating Scale.* Baltimore, MD: The Johns Hopkins Hospital; Johns Hopkins University School of Nursing

Perese, E.F. (2012). *Psychiatric advanced practice nursing: A biopsychosocial foundation for practice.* FA Davis.

Poland, R. E., Gertsik, L., Favreau, J. T., Smith, S. I., Mirocha, J. M., Rao, U., & Daar, E. S. (2013). Open-label, randomized, parallel-group controlled clinical trial of massage for treatment of depression in HIV-infected subjects. *The Journal of Alternative and Complementary Medicine*, *19*(4), 334-340. https://doi-org.silk.library.umass.edu/10.1089/acm.2012.0058

Rexilius, S.J., Mundt, C.A., Megel, M.E., & Agrawal, S. (2002). Therapeutic effects of massage therapy and healing touch on caregivers of patients undergoing autologous hematopoietic stem cell transplant. *Oncology Nursing Forum*, *29*, E35-44. https://doi-org.silk.library.umass.edu/10.1188/02.ONF.E35-E44

Sherman, K. J., Ludman, E. J., Cook, A. J., Hawkes, R. J., Roy-Byrne, P. P., Bentley, S., Cherkin, D. C. (2010). Effectiveness of therapeutic massage for generalized anxiety disorder: A randomized controlled trial. *Depression and Anxiety*, *27*(5), 441-450. https://doi-org.silk.library.umass.edu/10.1002/da.20671

Shirneshan, E., Bailey, J., Relyea, G., Franklin, B. E., Solomon, D. K., & Brown, L. M. (2013). Incremental direct medical expenditures associated with anxiety disorders for the U.S. adult population: evidence from the Medical Expenditure Panel Survey. *Journal of anxiety disorders*, *27*(7), 720–727. https://doi.org/10.1016/j.janxdis.2013.09.009

Trochim, W. M. (2020, March 10). Descriptive Statistics. Retrieved from

https://conjointly.com/kb/descriptive-statistics/

Tusaie, K.R. & Fitzpatrick, J. J. (2016). *Advanced practice psychiatric nursing: Integrating psychotherapy, psychopharmacology, and complementary and alternative approaches across the life span* (2nd ed.). Springer Publishing.

Weber, K. K. (2005). *Healing self-massage: Over 100 simple techniques for re-energizing body and mind*. London: Collins & Brown.

Winerman, L. (2017). The cost of treatment. *Monitor on Psychology*, *48*(3).

http://www.apa.org/monitor/2017/03/numbers

World Health Organization. (2016). *Investing in treatment for depression and anxiety leads to fourfold return.* https://www.who.int/news-room/detail/13-04-2016-investing-in-treatment-for-depression-and-anxiety-leads-to-fourfold-return

Yücel, Ş. Ç., Arslan, G. G., & Bagci, H. (2019). Effects of hand massage and therapeutic touch on comfort and anxiety living in a nursing home in turkey: A randomized controlled trial. *Journal of Religion and Health*. https://doi-org.silk.library.umass.edu/10.1007/s10943-019-00813-x

Appendix A

GAP Analysis

Best Practice Solutions	Best Practice Strategies	Current Practice	Barriers/Facilitators
Integration of complementary and integrative modalities into community mental health can enhance mental health outcomes and improve quality of life for mental health clientele. Specifically, " The evidence favoring massage for anxiety and depression suggests a clear rationale for considering massage in community mental health practice" (Collinge and Wentworth, 2005, p. 571).	1. Contract with professional trained in massage, bodywork, or energy healing to provide onsite treatment to psychiatric clients.	No current CIM interventions offered onsite. Current treatment offered includes traditional psychopharmacology and psychotherapy as well as functional medicine practices.	Barriers: -Financial barrier for implementation -cost of treatment. -Lack of insurance coverage. Clients to pay out of pocket or provider to absorb cost. Facilitators: -Explore potential potions for pro bono treatments with local CIM training programs or those looking to volunteer within mental health setting. -Potential expansion of practice and means of attracting more clientele.
	2. Current providers receive extended training in healing touch modalities and how to integrate these into psychotherapy treatments.	Onsite providers with no current training or certification in complementary and integrative modalities.	Barriers: -Cost of training programs. -Extensive time required to complete certain trainings.

			Facilitators: -Current staff with sincere interest and desire to be able to offer CIM and incorporate modalities into treatment plan.
	2. Build relationships with CIM practitioners in the community to create more extensive referral bank for complementary and integrative modalities.	-No professional relationships established with outside CIM providers within the community.	Barriers: -Potential stigma surrounding mental health clientele and psychiatric provider as referral source. -Issues surrounding HIPAA and maintaining client confidentiality surrounding mental health diagnoses. -Not traditionally covered by insurance and clients to pay expensive out of pocket costs. Facilitators: -Potential income source for CIM providers through referral by psychiatric practitioner. -Opportunity for CIM and psychiatric providers to take a multi-disciplinary team approach.

Appendix B

Diagram -Betty Neuman's Systems Model
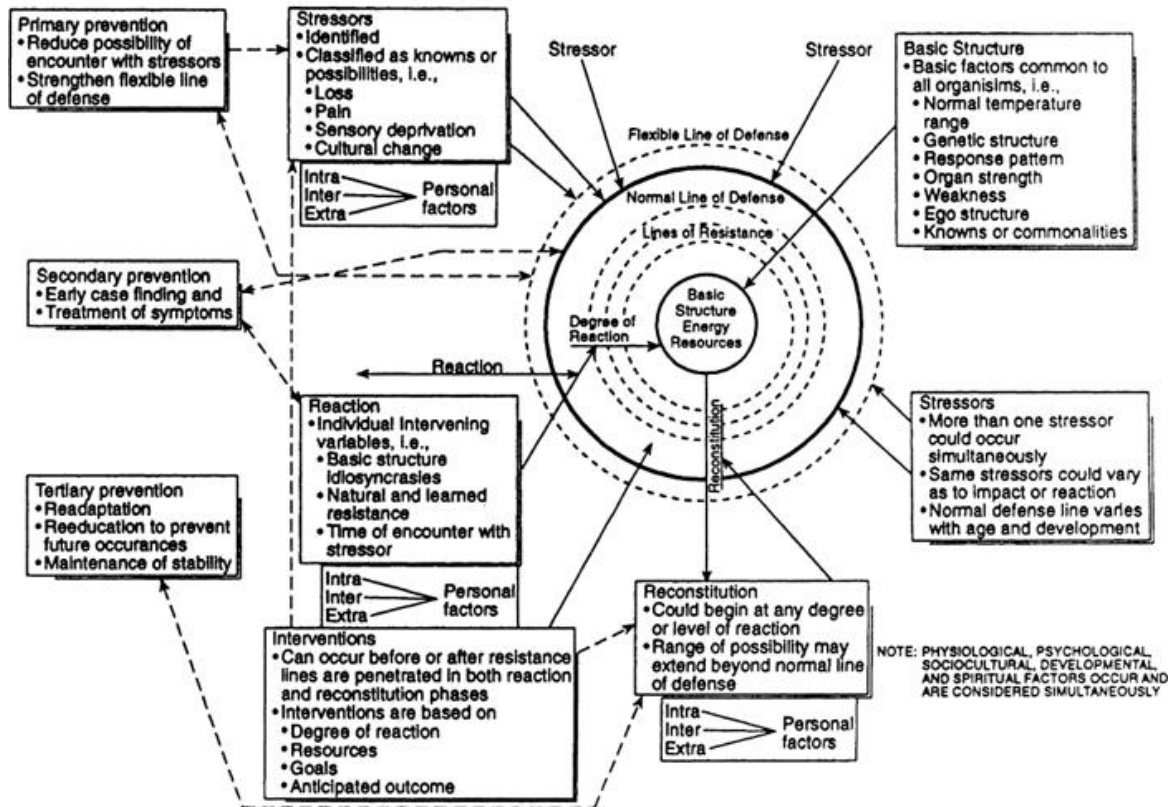
NOTE: Spiritual variable added.
SOURCE: Reprinted by permission of Betty Neuman.

Freese, B., & Lawson, T. (2017, February 9). Systems Model. Nurse Key.

https://nursekey.com/systems-model/

Appendix C

IRB Approval

UMassAmherst

Human Research Protection Office

Mass Venture Center
100 Venture Way, Suite 116
Hadley, MA 01035
Telephone: 413-545-3428

Memorandum – Not Human Subjects Research Determination

Date: September 30, 2020

To: R. Maryam Lempke, Nursing

Project Title: *Massage Therapy for Anxiety and Depression*

HRPO Determination Number: 20-209

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

☐ The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].

☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].

☒ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].
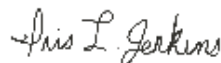
<u>Submission of an Application to UMass Amherst IRB is not required.</u>

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. *Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.*

A project determined as "Not Human Subjects Research," must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

Iris L. Jenkins

Iris L. Jenkins, Assistant Director
Human Research Protection Office

Appendix D

Cost-Benefit Analysis

Category	Estimated Cost	Benefit
Qualtrics	$0	Platform utilized for survey administration.
Zoom	$0	Platform used to record educational session.
Vimeo	$0	Platform used for education dissemination.
Client Invitation	$0	Used to introduce clients to the concept of massage for depression and anxiety and provide information about educational session.
Educational Session	$0	Practice improvement intervention implementation.
Client Informational Brochure	$0	Handout to accompany recorded educational session.

Benefit	Cost
• Large systematic review by Herman et al. (2012) specifically showed positive findings for both improvements in health as well as economic benefits of the use of CIM versus conventional care. • DNP project will help to incorporate CIM into the psychiatric treatment setting and improve patient outcomes and satisfaction. • DNP project will increase client and provider knowledge of massage therapy in the treatment of anxiety and depression.	• Systematic reviews have demonstrated the cost effectiveness of complementary and integrative modalities versus conventional treatment (Lake & Turner, 2017). • In a cost effectiveness analysis examining the use of CIM in treatment of anxiety disorders, through analysis of the Medical Expenditure Panel Survey (MEPS), Kitch (2016) found that CIM expenditures were significantly offset by reduction in pharmaceutical and office-based costs. • CIM found to have high probability of cost effectiveness in treatment of anxiety disorders (Kitch, 2019).

Appendix E

Timeline

Task	May 2020	Jun 2020	Jul 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	March 2021	April 2021
Recruitment of eligible participants						X	X	X	X	X		
Project approval					X							
Pre-Test									X	X	X	
Educational session									X	X	X	
Analysis of data											X	
Post-test									X	X	X	
Results presented												X

Appendix F

Pre/Post Education Client Questionnaire

Please rate the following statements on a scale of 1 (strongly disagree) through 5 (strongly

agree).

1) I am knowledgeable about the use of massage therapy for anxiety/depression symptom
management.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

2) Massage therapy is an effective intervention for management of symptoms of
anxiety/depression.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly sagree

3) I am knowledgeable regarding the overall benefits of massage therapy.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

4) I am knowledgeable regarding the contraindications of massage therapy.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

5) I am comfortable with the idea of performing a self-massage treatment.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

6) I would like to use massage therapy as a form of symptom management.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

7) I am interested in incorporating self-massage treatments into my routine.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

8) I am confident in my ability to perform self-massage treatments.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

9) Self-massage will be helpful in the management of symptoms of anxiety/depression.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

10) The information presented in this educational session was effective in expanding my knowledge regarding the use of self massage for symptom management of anxiety/depression.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

*** question number 10 on post-education survey only.

Appendix G

Pre/Post Education Provider Questionnaire

Please rate the following statements on a scale of 1 (strongly disagree) through 5 (strongly

agree).

1) I am knowledgeable about the use of massage therapy for anxiety/depression symptom
management.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

2) Massage therapy is an effective intervention for management of symptoms of
anxiety/depression.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

3) I am knowledgeable regarding the overall benefits of massage therapy.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

4) I am knowledgeable regarding the contraindications of massage therapy.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

5) I am motivated to educate clients on the use and benefit of massage therapy for management
of symptoms of anxiety/depression.

[ ] strongly disagree   [ ] disagree   [ ] neutral   [ ] agree   [ ] strongly agree

Appendix H

Participant Invitation

Study Title: Massage Therapy for Anxiety and Depression

You are invited to participate in a practice quality improvement study conducted by Maryam Lempke, DNP student from the University of Massachusetts, Amherst.

 We are asking you to take part in this study because massage therapy has been proven as an effective method of improving symptoms of depression and anxiety within the behavioral health patient population as evidenced through literature review.

Your participation is voluntary and would consist of viewing an online educational video recorded via Zoom and offered through Vimeo link regarding benefits of massage therapy and implementation of self-massage techniques. You will be asked to complete a client questionnaire prior to viewing the educational video, and then again following the viewing.

There are no anticipated risks to your participation and there are no direct benefits to you for taking part in this study.

Your participation is voluntary. You may decide to discuss your participation with your family or friends.

If you wish to participate and learn more about the potential benefits of massage therapy, please contact me at rlempke@umass.edu

Appendix I

Educational Brochure

Capstone
Educational Brochure.