

MINDFULNESS MEDITATION FOR OPIOID ADDICTION IN AN
OUTPATIENT PSYCHIATRIC SETTING

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by Phillip Allen Stensrud, titled Mindfulness Meditation for Opioid Addiction in an Outpatient Psychiatric Setting and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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ABSTRACT

Opioid dependence and addiction continues to be an evolving problem with limited known effective treatment modalities. There is a need for research into new treatments and strategies to combat this rampant problem. Mindfulness meditation has been observed in many studies to be a beneficial adjunct therapy in addition to usual addiction treatment that has resulted in a reduction of craving, improved self-control, and improved rates of substance abstinence. The purpose of this project was to increase knowledge of mental health prescribers and therapists on the practice and benefits of mindfulness meditation in the setting of opioid addiction treatment in an outpatient behavioral health clinic. An additional aim was to observe a greater utilization of mindfulness meditation in this clinic for opioid abuse treatment. An educational workshop was developed for the purpose of the project and three surveys were created to gather data before, directly after, and two weeks after the intervention.

Five psychiatric prescribers and seven behavioral health therapists employed at Marana Health Center were recruited and assessed via survey for baseline perceptions and current knowledge on the benefits and utility of mindfulness meditation. The participants attended the educational workshop and were surveyed again to measure the impact of the intervention on their knowledge and perceptions on mindfulness meditation. A two-week follow-up survey was delivered and completed by nine out of the 12 participants to assess the impact of the intervention. The results from the surveys one and two were analyzed and showed a significant increase of baseline knowledge and perception on mindfulness meditation for the entire group ($p = 0.0006$; $p = 0.041$). The final survey revealed that since the educational workshop there was no significant increase to the number of clients undergoing opioid addiction treatment that were

recommended mindfulness meditation as an adjunct treatment. However, mindfulness recommendations to clients in general were observed across the participant group (mean: 1-5 clients). Overall, the participants were receptive to learning about mindfulness meditation and showed increased knowledge after attending an educational workshop, subsequently agreeing that they saw its potential as an effective adjunctive treatment for opioid addiction.

INTRODUCTION

The opioid epidemic that is engulfing the United States continues to surge with two out of three (2:3) overdose-related deaths involving opioids and a six-fold increase in opioid-related overdose deaths since 1999 (Centers for Disease Control and Prevention [CDC], 2018). In 2017, 47,600 deaths were attributed to opioid overdose, accounting for 67.8% of all drug-related overdose deaths in this nation (CDC, 2018). These numbers include deaths from heroin and prescription/synthetic opioids; however, 36% of these deaths are attributable directly to prescription opioids (CDC, 2018). Despite the type of opioid used, the abuse of prescription opioids has been linked with an increased risk for abusing heroin, creating a vicious gateway into hard drug addiction (Green, 2017). With the ever-increasing numbers in this epidemic, it has become necessary for the healthcare practitioners in clinics and hospitals to employ evidence-based practice in the pursuit of prevention and treatment of opioid abuse.

Background Knowledge

In the United States from 1999 to 2017, it was estimated that over 218,000 people died from prescription opioid-related death (CDC, 2018). The overprescribing of opioids presents as one of the main factors in this issue, with 20% of pain-related diagnoses resulting in a prescription for an opioid (Green, 2017). The abuse potential for prescribed opioids should not be underestimated, as more than 10% of patients develop chronic usage and possible escalation of dosage (Green, 2017).

If the death toll is not startling enough, the financial burden and damages caused by this epidemic impacts the entire nation and will continue to get worse as prevalence increases. It was estimated between 2002 to 2012 that the approximate cost for opioid abuse hospitalizations was

\$15 billion, with a staggering \$700 million attributed solely to infections associated with intravenous abuse of opioids in 2016 (Green, 2017). Estimates place the total economic burden of the opioid epidemic at \$78.5 billion with \$28.9 billion attributed to substance abuse treatment and increased need for healthcare (Florence, Luo, Xu, & Zhou, 2016). Out of the total financial amount, it is estimated that 25% of the cost falls upon the public when considering healthcare, substance abuse treatment, and criminal justice costs (Florence et al., 2016). Thus, the detrimental impact of opioid abuse on the health of this nation's citizens and the significant economic consequences makes finding effective solutions a priority.

For centuries, mindfulness meditation has been a component of Eastern spirituality. Mindfulness meditation is the practice of sensory detachment and reducing perceptual bias which has been used in western therapies such as cognitive-behavioral therapy (CBT) and mindfulness-based stress reduction (MBSR) therapy (Ratanasiripong, Park, Ratanasiripong, & Kathalae, 2015). Some of the observed benefits of mindfulness meditation include increased resilience and recovery from stress, enhanced problem solving, and better management of difficult situations (Erickson, 2016). These benefits can be reaped by those who learn mindfulness meditation to teach others and by those suffering from opioid abuse by curbing dependence and craving through improving one's mood and decreasing emotional dysregulation (Priddy, Howard, Hanley, Riquino, Friberg-Felsted, & Garland, 2018). Mindfulness-based interventions (MBI) are not uncommon treatment modalities in substance abuse, with evidence suggesting that these interventions improve higher order executive control that helps reign in automatic behaviors associated with craving (Witkiewitz, Lustyk, & Bowen, 2013). A systematic review of mindfulness meditation (MM) in the setting of substance abuse found that those who had been

treated with mindfulness meditation and continued the practice long-term had greater reductions in cravings, avoidance, psychiatric symptoms, and rates of substance use (Khusid & Vythilingam, 2016). However, it should be noted that the effectiveness of mindfulness meditation as a psychotherapeutic intervention for individuals with substance use disorder (SUD) has been observed when it is used as an adjunct to standard treatment (Khusid & Vythilingam, 2016). With the relapse rate of substance abusers undergoing traditional intervention programs estimated to be merely 60%, it has become necessary to investigate alternative treatments for improved patient outcomes – and mindfulness meditation shows promise as a useful tool in the treatment of opioid abuse (Priddy et al., 2018).

Local Problem

In Arizona, the number of drug overdose deaths rose by 9.4% from 2016 to 2017, showing that this insidious issue is firmly entrenched in this state (CDC, 2018). The Arizona Department of Health Service's real-time opioid data ranging from June 15, 2017 to January 17, 2019 reveals that 2,325 deaths have been attributed to opioids with 16,528 incidences of reported overdose (Arizona Department of Health Services [ADHS], 2019). It has become increasingly important for outpatient behavioral health clinics in Arizona to utilize the latest evidence-based research and the full complement of therapeutic modalities available in the treatment of opioid abuse to fight the mounting loss attributed to this epidemic ravishing the state.

Marana Health Center (MHC) located in Marana, Arizona is an integrated community health center that provides behavior health services including substance abuse assessment and treatment (Jeffries, n.d.). MHC mental health practitioners were asked about mindfulness meditation and reported that they did not have intimate knowledge of the practice and rarely

utilized or recommended during individualized therapy. Therefore, educating and raising the awareness of the behavioral health staff at MHC would be required for mindfulness meditation to be considered as an adjunct treatment option at this outpatient behavioral health clinic.

Purpose

The purpose of this DNP project was to increase knowledge of mental health prescribers and therapists on the practice and benefits of mindfulness meditation in the setting of opioid addiction treatment in an outpatient behavioral health clinic. To determine the feasibility of this intervention being utilized in practice, the knowledge and perceptions of the staff on mindfulness meditation was ascertained. Assessing the knowledge and perceptions of the prescribers helped determine the likelihood of the intervention being utilized. Educational knowledge was assessed once baseline knowledge of mindfulness meditation was established. Next, educating the prescribers and therapists on the benefits of mindfulness meditation and the methods took place in a manner that addressed the information gained during knowledge/perception assessment and incorporated actual participation in the practice. Also, if the individuals participating in this project continued to practice mindfulness meditation, more benefits would be perceived over this time period, creating a higher likelihood of buy-in (Duggan & Julliard, 2018).

With mindfulness meditation starting to appear more frequently in studies, the familiarity of this skill helped with gaining stakeholders. The stakeholders required for project to move forward in a clinic included the Chief of Clinical Behavioral Health, mental health practitioners, therapists, and the patients undergoing treatment. Receiving permission to launch this inquiry and the cooperative buy-in of clinical staff were paramount for success, as well as the willingness of the patient to undergo this alternative therapy. Champions were determined based

on perceived attitudes during training and those who showed the greatest interest in this intervention (Rogers, 2003).

Study Question

The question guiding this DNP project is: Does the formation of a mindfulness meditation workshop for mental health prescribers and therapists impact their perceptions and knowledge of the practice in the treatment of opioid abuse in an outpatient behavioral health clinic?

Theoretical Framework

Parse's human becoming theory was utilized to guide this project as it is classified as a human science theory that engenders the belief that people participate with the universe in the co-creation of health (Parse, 1992). The human becoming theory operates under three principles that are sectioned as meaning, rhythmicity, and co-transcendence (Parse, 1992). The first principle philosophizes that humans construct personal significance by interacting with their environment to determine what is real and how these meanings change as different experiences are accrued (Parse, 1992). This principle recognizes how knowledge is formed through personal choice, which aligns with the changes the mind undergoes with mindful meditative practice via increased neuroplasticity (Erickson, 2016). The principle is utilized in this project by creating an in-person educational demonstration of meditation that will foster personal significance. The second principle defines the idea of rhythmical patterns, especially the relational pattern of enabling-limiting that is described as an infinite number of opportunities and limitations where movement in one direction limits movement in another direction (Parse, 1992). The principle described here relates to how certain decisions close off other opportunities, which is a theme in

the life of an addict with more opportunities closing as addictive behaviors consume them. The aim of the project exemplifies Parse's second principle through raising knowledge and perception to a potentially beneficial adjunctive therapy, which creates more opportunities for treatment of those in need. The third principle is about transformation where powering is a concept of force that pushes one beyond the moment and conflict is used as an opportunity to clarify views (Parse, 1992). One of the purposes of practicing mindfulness meditation is to foster a greater self-awareness, which is supported by this principle by helping the client reach new levels of awareness and resolving conflict rather than running from it (Erickson, 2016). The hope of this project is to also help the participants reach a level of greater awareness towards mindfulness meditation during the educational demonstration. The human becoming theory fits well with this project and was a holistic guiding theory since it involves exploring one's mind in the pursuit of increasing attention and awareness to the moment (Erickson, 2016).

One of the focal points in understanding substance abuse is the addictive process, which the neurocognitive model of addiction lays a framework to help understand the underlying mechanisms of addiction (Garland, Froeliger, & Howard, 2014). The first focus is on habit responding automaticity, where the frontal-parietal attentional networks that dictate control over behavior have become functionally impaired due to repeated drug-use behaviors (Garland et al., 2014). Mindfulness meditation is thought to repair these functions through developing awareness of automatic behaviors by improving conscious control over automaticity and minimizing inattentiveness (Garland et al., 2014). The next portion relates to unregulated craving found in addiction, where the dysfunctional frontal-parietal pathways do not regulate craving appropriately anymore leading to stronger cravings elicited by internal and external triggers

(Garland et al., 2014). To gain a greater control over the craving process, mindfulness meditation is thought to strengthen frontal-executive circuit function and enhanced neural communication via hippocampal and thalamic functioning leading to improved control and awareness of craving (Garland et al., 2014). Lastly, unregulated affect refers to the dysfunctional reward system and negative emotions propagated by inefficient control in the circuitry associated with the amygdala and ventral striatum (Garland et al., 2014). For this dysfunction, mindfulness meditation is thought to spark a cognitive reappraisal of stressful events so that negative emotional impact is reduced and restructured, and the scope of attention is broadened to allow additional information that may encourage positive behavioral activation (Garland et al., 2014). This model helped support the case for mindfulness meditation in the setting of addiction treatment through understanding the underlying neurocognitive processes that are disrupted by prolonged substance abuse.

Concepts

Mindfulness is defined as increasing awareness to one's present moment experience with a nonreactive orientation and nonjudgmental attitude (Creswell, 2017). *Meditation* is defined as the observation of the functions of the mind and body from a state of non-reactive awareness (Lutz, Slagter, Dunne, & Davidson, 2008).

Synthesis of Evidence

A literature search was conducted using the PubMed, PsycInfo, and CINAHL databases to find research in regarding mindfulness meditation for opioid abuse. The terms utilized during the search were: "mindfulness meditation, mindfulness, meditation, opioid abuse, opioid dependency, opioid addiction, substance abuse, substance addiction, and addiction." Multiple

combinations and iterations were attempted with the final formulation yielding the most specific results was: mindfulness meditation and substance abuse with 61 articles. Unfortunately, thorough queries on PubMed, PsycINFO, and CINAHL search engines did not yield enough literature specific to mindfulness meditation intervention for opioid dependency. Therefore, it was prudent to broaden the search net with substance abuse as the mechanism of addiction as one of the barriers that is proposed to be overcome with the intervention of mindfulness meditation. Inclusion criteria was set to search for articles published within the last 10 years, full text available, human species, and available in English. Out of the 61 articles, 14 were retained with the others being rejected because of lack of specificity, no direct relation to substance abuse, or mindfulness meditation not a primary/relevant mechanism in the intervention (Appendix A). The combination of analyses of mechanisms of addiction with supporting evidence from quantitative mindfulness intervention studies strengthened the argument that similar strategies can be extended to the treatment of opioid dependency.

Out of the 14 articles, many of them had positive results related to mindfulness meditation as a primary mechanism of intervention, or at least a significant portion related to the treatment of substance abuse (Appendix A). Goal-management training (GMT) is an intervention strategy, which employs the establishment of goal hierarchies in attempt to attenuate ongoing behaviors or addictions (Valls-Serrano, Caracuel, & Verdejo-Garcia, 2016). This is accomplished through various tasks and assignments, in conjunction with therapy, and emphasizes sustained attention to the defined goals (Valls-Serrano et al., 2016). Studies by Alfonso et al. (2011) and Valls-Serrano et al. (2016) looked at GMT in combination with mindfulness meditation in polysubstance abuse treatment with significant findings showing

improvement to working memory, decision making, and impulsivity. The major limitation of these studies is differentiating whether the GMT or mindfulness meditation was more likely responsible for the significant findings. Another study by Himmelstein et al. (2015) looked at incarcerated adolescents with mixed substance-use disorder (SUD) and found that mindfulness meditation with treatment-as-usual (TAU) improved decision-making skills, as well as increased self-esteem levels and improved reported behavior by staff.

The reduction of cravings was observed in multiple studies and looks to be a pivotal factor in defeating addiction. Chen et al. (2010) looked at Qigong meditation (which uses mindfulness meditation) in the treatment of SUD with results showing reductions in craving, sleep issues, depression, and withdrawal symptoms; similarly, Witkiewitz and Bowen (2010) looked at the relationship of depression and craving in SUD with a positive correlation found between the two factors. A study by Grow et al. (2015) observed a link between decreased craving and increased home practice of mindfulness meditation after the conclusion of a SUD treatment study, while Ruscio et al. (2015) found reductions in craving, negative affect and cigarette smoking reduction with a brief-meditation practice intervention in smokers.

Other factors observed by the remaining studies include urge reduction, increased mindfulness scores, and decreased stress scores in smokers undergoing mindfulness training. A study by Davis, Manley, Goldberg, Smith and Jorenby (2014) incorporates mindfulness meditation as a similar intervention for smokers and utilized a web-based video instruction (Davis et al. 2015) to reduce anxiety and increase mindfulness in conjunction with mindfulness meditation in a subsequent study. An intervention with mindfulness meditation and cue exposure – a therapy technique that consists of exposure to substance abuse triggers (or “cues”) while

attempting to address and diminish the urge to use – has been utilized in self-identified binge drinkers. This results in decreased episodes of binge drinking, few observed consequences related to alcohol use, and increased dispositional mindfulness scores (Mermelstein et al., 2015). The only study to use fMRI observed that in multiple series utilizing brief mindfulness training (mindfulness meditation incorporated) in SUD showed an increase in connectivity and emotion regulation in the ACC and mPFC regions of the brain, which is thought to increase self-control behaviors related to addiction (Tang et al., 2016).

Mindfulness meditation intervention strategies have been utilized successfully in the treatment of substance abuse and are supported by literature both quantitative and qualitative in their findings. However, the vast majority of these studies are broad in their nature or fail to address one of the rising epidemics in this country. A systematic review by Chiesa and Serretti (2014) agrees with the above statements, observing that mindfulness-based interventions improve overall psychological outcomes of patients dealing with substance abuse even though current literature is limited in both methodology and reproducibility (Chiesa & Serretti, 2014). Another systematic review with a meta-analysis found positive results for mindfulness-based interventions in conjunction with substance abuse which showed decreases in substance misuse, cravings, and stress when compared to alternative treatments (Li, Howard, Garland, McGovern, & Lazar, 2017).

Opioid abuse is increasing at an alarming rate and it is a reality that needs to be addressed in the field of mental health research. The majority of literature that can be found on this issue focuses merely on prevention and therapeutic strategies to be used in parallel with opioid prescription, or as an alternative. This deficit in research highlighted the need to increase

awareness and understanding of the mechanism of opioid addiction. A systematic review by Zgierska, Rabago, Chawla, Kushner, Koehler, and Marlatt (2009) reports that despite positive outcomes found during their analysis, current research lacks strength in control and randomization and must be addressed in future research. Additionally, they recommend efforts towards developing comprehensive and conceptual models for implementing these models in future interventions for patients with SUDs (Zgierska et al., 2009). The strong supporting evidence demonstrated in studies, which use mindfulness meditation as an alternative intervention strategy for substance abusers offers a promising route for opioid addiction treatment in the future.

METHODS

Design

This project assessed the knowledge and perceptions of the mental health prescribers and therapists at Marana Health Center (MHC) on the practice of mindfulness meditation in the setting of opioid abuse treatment. Initially, a needs assessment was constructed and delivered to the mental health prescribers and therapists in the form of a survey for data to determine their baseline knowledge of mindfulness meditation and their current perceptions on the practice (Appendix B) (Polit & Beck, 2012). A survey was ideal for these metrics as they are among one of the best ways to generate information and feedback for program improvement (Thayer-Hart, Dykema, Elver, Schaeffer, & Stevenson, 2010). The needs assessment survey format was essential because it is ideal for recognizing priorities and judging identified needs during this baseline analysis (Polit & Beck, 2012).

The Model for Improvement developed by the Institute for Healthcare Improvement (IHI) offered a solid framework for the development, testing, and implementation of changes that was desirable when forming a quality improvement project (Appendix E) (IHI, n.d.). This model helped define the aims of the project, establishment of measures, and selecting the method that worked best for implementation (Donnelly & Kirk, 2015). The first question of the Model for Improvement pertained to determining what is being set out to be accomplished by this project (IHI, n.d.). In this project, the aim was to determine the current knowledge and perceptions of staff members on mindfulness meditation as an adjunct therapeutic treatment for opioid abuse. An additional aim was to determine a baseline assessment of those factors and create an educational presentation on the subject with the goal of increasing knowledge and perception on the topic to hopefully see a greater utilization of mindfulness meditation in this clinic for opioid abuse treatment. The second question from the Model of Improvement pertained to determining if the change does lead to actual improvement (IHI, n.d.). The assessments of perception and knowledge was constructed in the form of a surveys that allowed for the quantification and analysis of values which was further evaluated through statistical means to determine if improvement does occur. The third question from the Model for Improvement pertained to deciding what change can be made to enact an improvement (IHI, n.d.). The proposed change was to hold an educational workshop during the lunch hour with a demonstration on mindfulness meditation for all therapists and prescribers with the hypothesis that this will raise knowledge/perception scores and will lead to a greater utilization of mindfulness meditation in the setting of opioid abuse treatment (Appendix D). One of the unique features of this model was the Plan-Do-Study-Act (PDSA) cycle that is utilized to test whether a change will lead to

improvement by running a test of the implementation on a small scale and slowly analyzing and refining the change as the scale broadens (Donnelly & Kirk, 2015). The Model for Improvement by the IHI utilizes the PDSA cycle and served as this study's framework for implementation (Appendix E). The PDSA cycle served as a structure to synthesize and disseminate baseline surveying with the resultant rounds of the PDSA cycle incorporating an information/educational workshop on mindfulness meditation and its hallmarks related to opioid addiction treatment with post-assessment surveys to determine changes from baseline (Appendix B) (Donnelly & Kirk, 2015).

Setting

Marana Healthcare Center is a community health center that provides an integrated approach to healthcare to fulfil their mission of “[providing] compassionate, quality, and accessible whole person health care to [their] community” (MHC Healthcare, 2017a). As an integrated facility, the main campus has its own building for counseling and wellness, staffed with mental health prescribers and therapists that offer a range of services, including: case management, domestic violence therapy, employment services, housing assistance, outpatient therapy, parenting classes, substance abuse therapy, support and education groups, trauma services and a work adjustment program (MHC Healthcare, 2017b). Although the mental health prescribers have the scope and ability to perform psychotherapeutic treatments, the brunt of this type of intervention is placed on the therapists to perform. The expectation of the mental health prescribers at MHC is to employ pharmacotherapeutic interventions in their limited time slots and to consult to therapists for psychotherapy treatment. Mindfulness meditation can be a useful intervention for both the prescribers and therapists, as it is a self-management skill that can be

taught in a minimal amount of time, has been shown to work adjunct with other therapies, and is easy to learn.

One of the barriers found in a mindfulness meditation implementation study at a substance abuse facility found that improper setting was a factor (Larkin, Hardiman, Weldon, & Kim, 2012). This was not be an issue as the study took place at the MHC main campus in one of its many comfortable and well-equipped conference rooms. Baseline self-assessment surveying was delivered in-person to the MH prescribers in their personal offices to ensure that the participant acknowledges participation through this medium and knew the purpose and altruistic motives of this project to increase cooperation (Thayer-Hart et al., 2012). The mindfulness meditation workshop was conducted in a reserved conference room with comfortable chairs and a large wall-mounted flat screen television to disseminate the intervention via PowerPoint presentation.

Participants

The mental health prescribers and therapists at MHC served as the participants of this project. Criteria for inclusion were: (a) employee at MHC main campus and (b) mental health practitioner with ability to prescribe pharmacotherapeutic or conduct psychotherapeutic treatments. Exclusion criteria for this project were staff unable to employ psychotherapeutic interventions and staff that are not physically present at the MHC main campus. A supervising clinical preceptor – who bore a wealth of experience in the field of mental health practice since 2001 and was highly respected among his/her peers – served as a champion for this project with his/her expert opinion utilized to guide this project to success (Rogers, 2003). Other potential champions were gained from the group of behavioral health therapists as their primary function

pertains to psychotherapeutic treatments and had more familiarity with alternate therapies such as mindfulness meditation.

Data Collection

A needs assessment was constructed in the form of a self-report survey for baseline assessment and post-intervention surveys were synthesized in response to those inputs for analysis of interventional efficacy (Appendix C) (Polit & Beck, 2008). During survey development, constructed questions were envisioned from the perspective of the respondent, reliability was maintained with refined language that leaves little room for extraneous interpretation, and validity was protected through measuring properties meant to be analyzed (Thayer-Hart et al., 2012). There were three separate surveys synthesized and delivered during this project. The first survey was distributed to participants with questions aimed at learning their current knowledge of mindfulness meditation and if it was a therapeutic modality used in their interactions with clients at MHC. Based on these results, the educational workshop on mindfulness meditation was developed and adjusted in consideration to this data (Appendix D). The educational workshop was held in a reserved conference room during the lunch hour that incorporated a power point presentation and a group demonstration of mindfulness meditation. At the conclusion of the educational workshop, all participants were sent a copy of the PowerPoint presentation via email with a list of resources that could be reviewed or imparted to clients. The second survey was delivered and completed at the culmination of the educational workshop. Two weeks later the third survey was sent to all participants to gauge retention of knowledge from the educational workshop and if the knowledge and skills learned were imparted to clients in general and those undergoing treatment for opioid dependence. Despite the

absence of three surveys from the two-week follow-up survey pool, data was able to be analyzed across the pre-survey and post-educational workshop surveys for these participants. Pairwise deletion was utilized to address the missing survey values on a variable-to-variable basis (Polit & Beck, 2012). The surveys were self-administered in physical paper format and comprised of questions with word-labeled response categories for ease of use and increased reliability (Thayer-Hart et al., 2012) (Appendix C). Word-labeled response categories were easy to understand and made analysis of the data simple when the categories are assigned numerical values (Thayer-Hart et al., 2012).

Data Analysis

Results obtained from the surveys were graphically represented to display pre-treatment and post-treatment results. The programs used for statistical analysis were RStudio for data analysis and Microsoft Excel for graphical creation. Participants chose a memorable four-digit numerical value for the purpose of tracking the completed surveys and protecting anonymity. Collected surveys were scored according to responses to individual questions, which were assigned a numerical value from '1' to '5.' The average score observed in the pre-assessment survey was used as the sample mean, which was used in calculating the t-score in conjunction with the sample mean resulting from average post-assessment survey scores. Participant pre- and post-test data were linked for statistical analyses to determine if the educational workshop on mindfulness meditation had significantly increased the knowledge and perceptions of the participants, with these metrics being illustrated graphically with individual's data aggregated to maintain confidentiality of the participants (Appendix C).

Ethical Considerations

This project was submitted to the Institutional Review Board (IRB) through the University of Arizona (Appendix F) for consideration prior to final approval at Marana Health Center (Appendix G). The participants in this project were behavioral health staff members that are either prescribers or therapists. The ethical principle of beneficence was upheld by minimizing any chance of harm befalling participants and ensuring the information that was provided will be protected (Polit & Beck, 2012). Beneficence can be found in the project's aim to raise knowledge and perception of mindfulness meditation. Also, patients receiving treatment for opioid abuse may benefit from an extra treatment modality option. Justice was maintained as the selection of participants will be chosen based on study requirements and maintained the participant's rights to privacy and the ability to decline involvement in the study (Polit & Beck, 2012). The participants were respected throughout this entire process with full disclosure about the nature of this project with no coercive tactics employed (Polit & Beck, 2012). There were no vulnerable populations used during this project and the risk was minimal for participation with confidentiality upheld through IRB recommended practices. To maintain anonymity, participants determined a four-digit personal identification number of their choosing to correspond with the three surveys. For confidentiality, only the participant had knowledge of their chosen four-digit personal identification number and the completed surveys were secured in a locked cabinet within an office room and were destroyed upon completion of data analysis via shredding.

RESULTS

Ultimately, 12 participants were recruited consisting of five prescribers and seven therapists employed at MHC. This group boasted a large range in years of experience, ranging from one year of experience to 30 years of practice in their role. Two surveys that were completed by students observing the educational workshop were rejected from analysis per inclusion criteria (Figure 1).

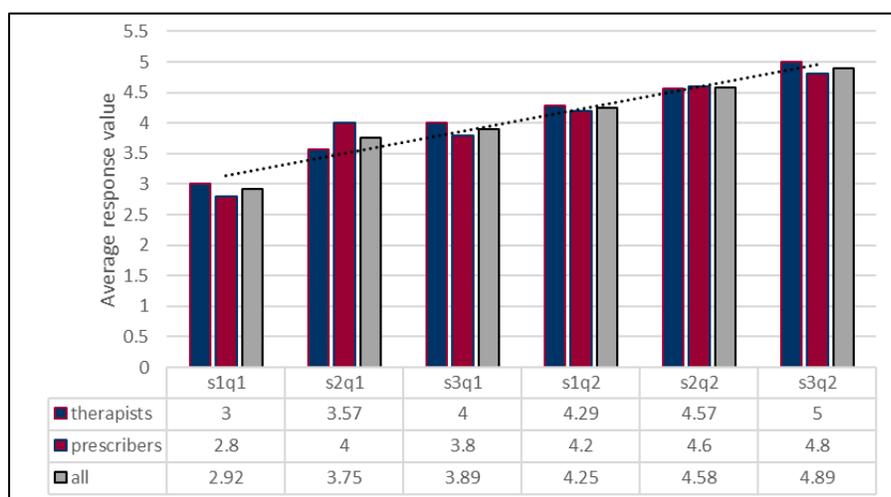


FIGURE 1. Results: Questions 1 and 2. (Changes in knowledge and perception among therapists and prescribers regarding mindfulness meditation as an adjunct therapy for opioid addiction at Marana Health Center. Question 1 (Q1) asked both therapists and prescribers to rate their knowledge of mindfulness meditation and question 2 (Q2) asked whether both groups agreed that mindfulness meditation serves as a complementary and alternative method for therapeutic treatment in behavioral health. Questions were evaluated on a 5-point scale ranging from (1) *None at all*, (2) *Little*, (3) *Somewhat*, (4) *Above average*, (5) *Expert* (Q1) and (1) *Strongly disagree*, (2) *Disagree*, (3) *Neither agree or disagree*, (4) *Agree*, (5) *Strongly agree* (Q2). Three surveys were administered prior to an educational demonstration, immediately after the demonstration, and two weeks post-demonstration. An increase of the means of both knowledge and perceived usefulness of mindfulness meditation was observed in both therapist and prescriber groups, which is supported by an R-value of 0.9525, indicating a strong positive linear relationship.)

Question 1 across all surveys was used to determine self-reported amount of knowledge on MM. With survey one, the baseline was established with an average of 2.92 for the participant group (μ response value = 2.8 [*prescribers*], 3 [*therapists*]) reflecting a moderate amount of knowledge on the subject. The second survey (S2) showed an increase with an average of 3.75

(μ response value = 4 [*prescribers*], 3.57 [*therapists*]) reflecting still a moderate amount of knowledge but closer to bordering on above average after the educational workshop. The third survey (S3) continued to show growth in knowledge of MM with an average of 3.89 (μ response value = 3.8 [*prescribers*], 4 [*therapists*]) two weeks after the educational workshop and further pushing closer to the boundary of above average from moderate.

Question 2 across all surveys was used to assess if the participants thought MM could be useful as an alternative therapeutic treatment. At the initial survey (S1), the average across both groups showed 4.25 (μ response value = 4.2 [*prescribers*], 4.29 [*therapists*]) inferring agreement with the statement. From the second survey (S2) post-educational workshop, these numbers did see improvement with an average of 4.58 (μ response value = 4.6 [*prescribers*], 4.57 [*therapists*]) showing agreement but pushing closer to strongly agree. The two-week follow-up survey showed that these numbers continued to increase with an average of 4.89 across both groups (μ response value = 4.8 [*prescribers*], 5 [*therapists*]) which further closed the distance from agree to strongly agreed.

Question 3 on survey one (S1) was used to determine if the participants had recommended mindfulness meditation in their practice which showed that on average that MM was recommended to about half of their clients (3.25), but there was a large disparity between the groups with therapists on average recommending to more than half (4) of their clients and prescribers recommending to few (2.2).

Question 4 on survey one (S1) was used to assess if the participants had demonstrated mindfulness meditation in their practice which showed that on average MM was demonstrated to

few clients at 2.25, but again there was a wide margin with therapists on average demonstrating to few (2.71) and to none with prescribers (1.6) (Figure 2).

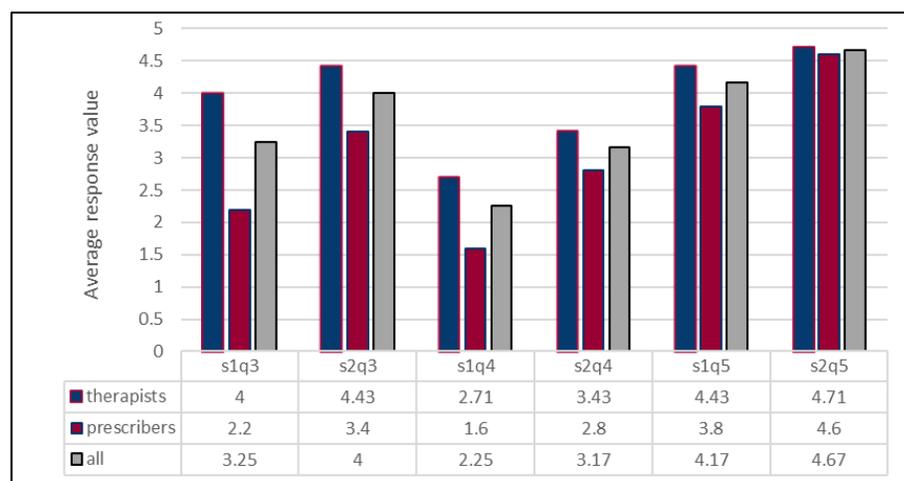


FIGURE 2. Results: Questions 3 and 4. (Qualitative analysis of therapist and prescriber willingness to recommend (Q3), demonstrate (Q4), and/or utilize in practice (Q5) mindfulness meditation as an adjunct therapy for opioid addiction at Marana Health Center. Surveys 1 (S1) and 2 (S2) were administered prior to an educational demonstration and immediately after the demonstration. Q3, Q4, and Q5 were evaluated on a 5-point scale ranging from (1) *Never*, (2) *Few*, (3) *About half*, (4) *More than half*, (5) *All or almost all*, and Q5 ranging from (1) *None*, (2) *1-5 clients*, (3) *10 clients*, (4) *11-15 clients*, (5) *More than 15 clients*. An increasing mean for each Q3, Q4, and Q5 across S1 and S2 shows an increase in both the willingness to recommend and demonstrate mindfulness meditation techniques to clients currently undergoing treatment for opioid addiction. An overall higher average response value was observed across the therapist group, indicating therapists were more likely to both recommend and demonstrate mindfulness meditation both prior to and immediately after the educational presentation. However, a greater increase in the average willingness to recommend and demonstrate mindfulness meditation was seen in the prescriber group from S1 to S2.)

Question 3 on survey one (S1) was used to determine if the participants had recommended mindfulness meditation in their practice which showed that on average that MM was recommended to about half of their clients (3.25), but there was a large disparity between the groups with therapists on average recommending to more than half (4) of their clients and prescribers recommending to few (2.2).

Question 4 on survey one (S1) was used to assess if the participants had demonstrated mindfulness meditation in their practice which showed that on average MM was demonstrated to

few clients at 2.25, but again there was a wide margin with therapists on average demonstrating to few (2.71) and to none with prescribers (1.6) (Figure 2).

Question 5 on survey one (S1) was used to observe if there was interest in clinically using mindfulness meditation if education was provided. The average score showed that the group would consider using mindfulness meditation more than half the time (μ response value = 4.17 [all], 3.8 [prescribers], 4.43 [therapists]) (Figure 3).

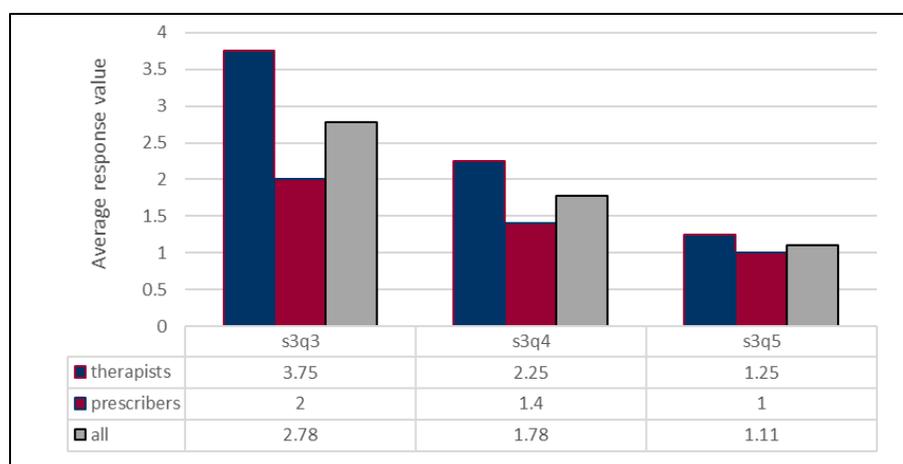


FIGURE 3. Results: Question 5. (Quantitative analysis of therapist and prescriber recommendation (Q3), demonstration (Q4) and/or utilization (Q5) of mindfulness meditation as an adjunct therapy for opioid addiction in client sessions after attending an educational presentation. Survey 3 (S3) was administered two weeks post-presentation. Q3, Q4, and Q5 were evaluated on a 5-point scale ranging from (1) *None*, (2) *1-5 clients*, (3) *6-10 clients*, (4) *11-15 clients*, (5) *More than 15 clients*. Overall therapists were more likely to recommend and demonstrate mindfulness meditation with clients (mean response value of 3 and 2, corresponding to 6-10 clients, and 1-5 clients for Q3 and Q4, respectively). Prescribers were less likely to recommend and/or demonstrate mindfulness meditation in practice (mean response value of 2 and 1, corresponding to 1-5 clients and no clients for Q3 and Q4, respectively). *It should be noted that responses for S3 were unable to be collected from three participants, likely skewing the data.*)

Question 3 on survey two (S2) was used to determine if the participants planned on recommending mindfulness meditation after being educated. The group average revealed planning on recommending more than half the time (μ response value = 4.0 [all], 3.4 [prescribers], 4.43 [therapists]). Question 4 on survey two (S2) was used to assess if the participants planned on demonstrating mindfulness meditation to clients with averaged responses

indicating that the group would about half the time (μ response value = 3.17 [*all*], 2.8 [*prescribers*], 3.34 [*therapists*]). Question 5 on survey two (S2) was used to determine if the participants after being educated on MM saw the potential benefit for the treatment plan for opioid abuse. Overall, the group scored for incorporating MM more than half the time (μ response value = 4.67 [*all*], 4.6 [*prescribers*], 4.71 [*therapists*]).

Question 3 on survey three (S3) was used to gauge if the participants had recommended mindfulness in the two weeks since the educational workshop showing a group average of 1-5 clients with therapists recommending to 6 to 10 clients on average and providers recommending to 1 – 5 clients (μ response value = 2.78 [*all*], 2.00 [*prescribers*], 3.75 [*therapists*]). Question 4 on survey three (S3) was used to determine if the participants had demonstrated MM to any clients. The overall result showed an average of no clients but when differentiated revealed that the therapists demonstrated it on average to 1 to 5 clients while the prescribers had not demonstrated on average to any clients (μ response value = 1.78 [*all*], 1.40 [*prescribers*], 2.25 [*therapists*]). Question 5 on survey three (S3) was used to determine if the participants had used the knowledge gained from the educational workshop to incorporate MM into the treatment plan for opioid abuse, but the overwhelming result was that it had not reached this population in the two-week period (μ response value = 1.11 [*all*], 1.00 [*prescribers*], 1.25 [*therapists*]).

DISCUSSION

Aims

The knowledge and perceptions of staff members on mindfulness meditation as an adjunct therapeutic treatment for opioid abuse was determined to accomplish the first aim of the project. This data shows that knowledge and perception were increased among the participants

after the educational workshop, which partially fulfils the second aim of the project. This is attributed to the lack of an observed increase to utilization of mindfulness meditation at this clinic for opioid abuse treatment. Although the knowledge gained from this educational intervention did not reach the population of focus, it did not come as a surprise given the circumstances surrounding the newly developed MAT program to address opioid addiction that is still in its infancy, but on its way towards full implementation and is slowly acquiring enrollees at this point in time. The argument can be made that although the intervention has not yet reached this population, having introduced MM education into the system at this time places it in a strategic position to continue growing in conjunction with the MAT program in its own infant state. Duggan and Julliard (2018) came to the determination after their own experience with implementing MM that buy-in and staff having knowledge of mindfulness practices could be instrumental towards the full implementation of this intervention.

Impact of Results on Practice

The results show that the interest for MM as an adjunct treatment for opioid addiction treatment is existent at MHC after the educational workshop, but it has been observed in another study that some individuals require more exposure and time to begin fully embracing it and then potentially advocating for it (Duggan & Julliard, 2018). Continuing to cultivate the interest to meet this factor of longer-term exposure will help realize this goal in the future. After the conclusion of the educational workshop, there was observable excitement about mindfulness mediation at MHC that had been missing for some time. The day after the workshop, a therapist sent out an email to all therapy staff with a link to a video on a compelling lecture about mindfulness. Another observed impact of the project was during a prescriber meeting, the

prescriber that is actively developing the MAT program for opioid addiction at MHC made mention of the project during his updates and stated that it would be an important factor going forward in the program.

Strengths

Throughout the project, support from administration was ample and encouraging with aid given in preparation for a room for the educational workshop and the full resources of the clinic available to complete it. This factor in the project was important for the success of the project as another study had observed that the lack of an environment conducive to the training of MM was a barrier to implementation (Duggan & Julliard, 2018). During recruitment and throughout the project, there was a palpable excitement among the therapist participants about the topic being taught and its implications for usage in the developing medication assisted treatment (MAT) program. Seeing this receptiveness was encouraging moving forward with the intervention. Another relevant contextual element was the MAT program, which was freshly implemented as of August and is still being actively developed. This factor may have impacted the responses to S3Q4 since there are a limited number of MAT clients at this time.

This project aided in the reinvigoration of the knowledge base for mindfulness mediation at MHC with the education of its overall benefits and specific benefits for the treatment of opioid dependence. Feedback via the post-educational workshop survey (Appendix C) was gathered with a question asking what the participants liked about the presentation. The responses revealed that six participants enjoyed the demonstration of MM, three participants liked the research aspect and four participants thought the topic was interesting. With the implementation and

conclusion of the project, the door is now open for MM to continue to grow at this clinic and with the observed strength of data it should continue to be well-received.

Limitations

The data suggested that this intervention has not reached the opioid abuse population as hoped in the aims of the project; however, this was not surprising, as the MAT program started as of August and is still being actively built with new clients being added on a weekly basis. At the last prescriber meeting, the prescriber building the MAT program stated that some of the current barriers being addressed are the lack of dedicated staff for specifically MAT and a lack of training/specialization among them to address the opioid abuse population. After the project data collection had concluded, a prescriber mentioned that they had not recommended MM to any of their clients yet since they did not have an easy to access printable handout to give out (Appendix H). Reactively, one was created after this request and disseminated to the MH prescribers and therapists to use for their clients that they recommend MM to during an appointment. A strategic trade-off made during the project was the utilization of physical paper surveys in an effort to add a more personal nature to the project with in-person recruitment and explanation of the project to potential participants. A potentially better strategy would be to employ an electronic survey to further improve productivity and increase participation with a more convenient method to collect responses to surveys.

One of the problems that may have impacted the overall data was holding only one educational workshop which limited the number of participants able to attend as more than the number participated showed individual interest at some point during the project but was unable to make it due to scheduling conflict. The third survey was difficult to collect, participation

staggered and ultimately led to three surveys not being attained. Reminders were sent through email multiple times, but once an additional week went by after the launch of the two-week follow-up survey it was determined that this data may be skewed if it were received after this point. A positive benefit gleaned from the baseline assessment of mindfulness meditation knowledge showed that there was ample room for improvement for learning, especially among the prescriber population. The difficulty of engaging the prescribers could be related to their increased time constraint and their lack of employing psychotherapeutic interventions given their expected role of managing pharmacotherapeutic interventions with the expectation of the therapists to utilize the former. Increasing the amount of educational workshops held and ensuring that there are resources available to readily disseminate information could increase engagement with the prescriber population at MHC.

Participants were aware that this was a DNP project and may have carried an expectancy bias that influenced results under the expectation of seeing growth between each survey. In the post-educational workshop survey, a qualitative question inquired what could be improved about the educational workshop. The majority either did not answer or wrote that it did not need improvement, but out of four other answers: three participants would have liked more information on the research aspect of the presentation and one other would have liked more demonstration to take place. Some additional barriers related to imprecision in the design were time constraints/scheduling conflicts for full participation, and difficulties with participant retention to the final survey of the project. Limited staff time was a common barrier observed in the implementation of mindfulness-based interventions and it was also identified that the inclusion of local champions to cultivate buy-in was an important factor in successful

implementation (Duggan & Julliard, 2018). In an effort to minimize limitations, surveys were developed to be as minimally leading as possible and kept anonymous to further diminish any bias. Also, the utilization of a needs assessment via the pre-survey helped determine baseline level of knowledge to aid in the development of the education workshop to further minimize limitations in the project. Additionally, a focus group with the participants was not held post-workshop which would have helped determine the strengths and weaknesses of the demonstration to further improve recommendations for future demonstrations.

Relationships of Results to Framework

From conception to completion, this project has shown that mindfulness meditation is capable of generating interest and was seen as a potentially beneficial treatment option for the treatment of opioid addiction. The human becoming theory and its three principles of meaning, rhythmicity, and co-transcendence were utilized in the development and execution of this project (Parse, 1992). The growth of knowledge and increased perception of utility for MM reflected these principles as the participants were willing to undergo voluntary educational training during their free time in an attempt gain an additional tool to improve the outcomes of the clients they serve in the behavioral health setting. Additionally, the inclusion and guidance of the neurocognitive model of addiction added credibility to the project as it outlined the structures of the brain impacted by addiction leading to dysregulated behavioral control, which seamlessly linked with the same structures of the brain that MM has been observed to improve (Garland et al., 2014).

It is the hope of this project that the benefits of the intervention remain sustainable and will have measures put in place going forward to continue to cultivate sustainability and further

grow the effects observed from the intervention. When initially constructing this project, it was disclosed from a staff member that there had been a prescriber several years ago that held a mindfulness meditation group that was well received. When the prescriber departed the clinic, the mindfulness mediation group was disbanded, and the subject had not been revisited until this project rekindled it. If the benefits from this project are to remain sustainable, it will require a champion to continue maintaining buy-in and advancing the project as outlined by the proposed PDSA cycle.

Implications for Future Practice

The purpose for using the PDSA cycle in this project was to ensure there would be a framework in place for the continuation and expansion of the project after this initial stage. After studying the results of this project, the planning phase for the next cycle would expand to other staff members that are involved in the substance abuse team. This includes recovery coaches (case managers/social workers), primary care prescribers, and other behavioral health staff that interact with this population regularly. Additionally, successive rounds should include any staff members that were not able to participate in the first cycle of the project to continue the educational impact of the intervention at this location. These same recommendations were observed in the successful implementation of mindfulness programs into an organization with an emphasis on support from leadership, a focus on the benefits of mindfulness, additional facilitators of the intervention, and the expansion of the intervention to additional staff members (Duggan & Julliard, 2018). With the addition of the recovery coaches, this project can officially take off into the next phase, as these are the staff members that will be making the most contact with clients enrolled in the opioid addiction treatment program. With more staff disseminating

and imparting mindfulness meditation education, there will be more opportunities to observe opioid dependent treatment clients undergoing multimodal addiction treatment with adjunctively added mindfulness meditation. With more clients enrolling in the program every week, by the time this project is renewed there will be a significantly larger population to learn mindfulness meditation and be assessed via survey. Additionally, it would be recommended to have MM handout resources ready to distribute at the educational workshop for the purpose of putting the proper tools in the possession of the participants to easily disseminate this information to clients (Appendix H). A final recommendation would be to establish mindfulness meditation refresher workshops held quarterly for the continued education of this topic and to maintain sustainability. With an increased number of workshops, the prescribers will have more flexibility and time to attend these educational demonstrations to learn the benefits of MM for opioid addiction treatment. At the conclusion of this project, an executive summary will be produced for further dissemination of the results from this project for the whole of MHC.

Conclusion

The ravages of the opioid epidemic persist and consequently the strive towards evidence-based treatment strategies to treat those caught up in it continues. If anything is to be gained from this project, it is that mindfulness meditation is a significantly receptive topic with a high level of utility given its outlined hallmarks. It may not seem like much, but it is another tool with promising benefits observed in evidence-based research that can be incorporated into an opioid addiction treatment plan. This project has garnered interest and opened the door for mindfulness meditation at MHC and with the population of clients enrolling for opioid addiction treatment

growing by the week, it will only be a matter of continued effort toward sustainability and time before it reaches them. “Our life is shaped by our mind, for we become what we think” - Buddha

Funding

There was no utilization of any funding from outside sources for this project. There were no expenses for implementing the educational workshop, data collection, obtaining participants, data analysis, and evaluation. During the educational workshop, a meal was bought and provided to the participants with the principal investigator’s own funds as a courtesy to the participants for yielding their lunchtime for participation in the workshop.

APPENDIX A:
LITERATURE REVIEW

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Alfonso, J. P., Caracuel, A., Delgado-Pastor, L. C., & Verdejo-García, A. (2011). Combined goal management training and mindfulness meditation improve executive functions and decision-making performance in abstinent polysubstance abusers. <i>Drug and Alcohol Dependence</i>, 117(1), 78-81.</p>	<p>GMT combined with MM and TAU 7-week program will have beneficial effects for executive and decision-making skills in outpatient alcohol and polysubstance abusers.</p>	<p>Pilot Study with TAU control group</p>	<p>N = 34 -GMT + MM group = 18 -TAU group = 16</p> <p>Candidates with DSM diagnosis for substance dependence and with clinically significant frontal-executive systems behavioral impairment</p> <p>Outpatient community treatment (Alicante, Spain)</p>	<p>Executive functions tests: WAIS-III subsets, BADS subsets, Stroop, Trail Making Test, Iowa Gambling Task</p> <p>Testing preformed pre-intervention and post-intervention to both groups</p> <p>Analyzed by series of eight mixed-design ANOVAS (Time: Pre- vs. Post-intervention) and (Treatment group: GMT + MM vs. TAU)</p>	<p>Significant results: Letter number sequencing (Time x Treatment): GMT + MM $p = 0.000$, TAU $p = 0.88$ Significant improvement for GMT + MM Stroop word color index (Time x Treatment): GMT + MM $p = 0.000$, TAU $p = 0.67$ Significant improvement for GMT + MM Iowa Gambling Task (Time x Treatment): GMT + MM $p = 0.01$, TAU $p = 0.36$ Significant improvement for GMT + MM Overall: significant beneficial effects on working memory, selective attention/response inhibition and decision-making skills for GMT + MM group.</p> <p>No significant findings: Zoo Map, Key Search, Trail Making Test</p> <p>Limitations: Small heterogenous sample, non-randomized</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Chen, K. W., Comerford, A., Shinnick, P., & Ziedonis, D. M. (2010). Introducing qigong meditation into residential addiction treatment: a pilot study where gender makes a difference. <i>The Journal of Alternative and Complementary Medicine</i>, 16(8), 875-882.</p>	<p>Does the addition of Qigong meditation for substance abusers increase efficacy of treatment?</p> <p>Qigong meditation = form of meditation that incorporates mindfulness, relaxation, breathing, guided imagery, and inward attention</p> <p>Volunteer-based participation for qigong meditation, second phase: offered to continue current practice or stress management/relaxation training twice daily for 5 days a week (2 weeks total)</p>	<p>Open pilot study</p>	<p>n = 248 qigong group = 126 stress management/relaxation training group = 81 Excluded for switching = 41 admitted to rehab, no exclusions Adult rehab unit in New Jersey</p>	<p>-Readiness to change ruler for alcohol, marijuana, cocaine, and opiates: baseline -Adjective Rating Scale for Withdrawal: weekly -Voris craving/negative-mood scale= weekly -CES depression scale = weekly -Spielberger State-Trait Anxiety Inventory = weekly -Substance-specific craving scale = weekly -Quality of meditation assessed by created four-item index</p> <p>Analyzed with x2 testing (baseline group differences), F-testing (continuous variables), ANOVA (change over time and group differences in key outcomes)</p>	<p>Significant results: Qigong group vs. stress management/relaxation training group reported significant reduction in craving in week 1 (p=0.054) and week 2 (p=0.065) Both groups reported significant reductions related to craving, sleep issues, anxiety, depression, and withdrawal symptoms during trail (p <0.01) Qigong group was also more likely to complete treatment (92%) versus stress management/relaxation training group (78%) with p <0.01</p> <p>Limitations: Self-selection bias, non-randomized, no controls, lack of training for study staff, heterogenous sample</p>
<p>Chiesa, A. & Serretti, A. (2014). Are mindfulness-based interventions effective for substance use disorders? A systematic review of the</p>	<p>Current evidence exists that supports MBIs as an effective method of treating substance abuse and increasing mindfulness, while</p>	<p>Systematic review</p>	<p>N(total) = 24 studies N(initial) = 887 studies N(excluded) = 826; did not directly investigate</p>	<p>Literature search, trial selection of articles eligible for inclusion, analysis of outcomes, interpretation of extracted results</p>	<p>MBIs have strong evidence in support of reduction in misuse for a wide variety of substances and can improve overall</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
evidence. <i>Substance Use & Misuse</i> , 49(5), 492-512.	acknowledging the limitations of existing studies.		<p>MBI usefulness for patients with SUDs</p> <p>N(evaluated, excluded) = 27; experimental design limitations</p>		<p>psychological outcomes of patients dealing with substance abuse. However current literature is limited in methodology and overall amount, but shows promising results for the future of substance abuse treatment.</p>
<p>Davis, J. M., Manley, A. R., Goldberg, S. B., Smith, S. S., & Jorenby, D. E. (2014). Randomized trial comparing mindfulness training for smokers to a matched control. <i>Journal of Substance Abuse Treatment</i>, 47(3), 213-221.</p>	<p>Comparison of MTS vs. FFS for smokers related to class attendance, attrition, practice compliance, smoking abstinence, urge intensity, mindfulness acquisition, and physiological measures</p> <p>MTS over seven weeks with seven 2.5 hour classes and a 6.5 hr quit day retreat (included meditation and mindfulness exercises), participants expected to practice 15-30 minutes of meditations daily at home.</p> <p>FFS time and intensity matched with cognitive skills and relaxation training.</p>	<p>Randomized-controlled trial</p>	<p>N = 135 MTS = 67 FFS = 68 Inclusion: 18 y/o and over, >5 cigarettes a day, no other tobacco products, high motivation to quit, no more than four alcoholic drinks out of 4 days/week</p> <p>Low socioeconomic areas of mid-sized Midwestern city recruited through advertisement.</p>	<p>-Smoking self-report status assessed at week four, week 24, and quit day (confirmed by carbon monoxide breath test and timeline follow-back smoking calendar) -Fagerstrom Test for Nicotine Dependence -Acceptance and Action Questionnaire - PSS-10 -FFMQ -Meditation/Relaxation Calendar -Urge assessment</p> <p>Independent group t-tests and chi square used to compare group characteristics, logistic regression computation for odds ratio and confidence intervals for smoking abstinence,</p>	<p>Significant results: MTS with significant drop to urge rating from baseline to post-study versus FFS ($p = 0.04$) and were more likely to report abstinence ($p=0.001$)</p> <p>Higher scores on post-treatment mindfulness and decreased post-treatment stress scores for MTS versus FFS observed by authors</p> <p>Numerical advantages reported for 24-week abstinence rate for MTS versus. FFS, but not statistically significant</p> <p>Authors claim that single-skill of MTS may be easier to practice versus</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
				Pearson correlations for secondary outcome measures, and ANCOVAs for between-group differences on change in self-report measures	more complicated system based on observation. Limitations: No blinding, attrition, lengthy intervention may have led to decreased motivation
Davis, J. M., Manley, A. R., Goldberg, S. B., Stankevitz, K. A., & Smith, S. S. (2015). Mindfulness training for smokers via web-based video instruction with phone support: A prospective observational study. <i>BMC Complementary and Alternative Medicine</i> , 15(1), 95.	Is MTS delivered via web based video instruction with telephone-based counseling support a feasible method to engage smokers wishing to quit. Eight video-based classes instructing mindfulness skills with eight weekly phone calls from smoking cessation coach delivered over eight-week period MM and mindful skills instruction imparted in videos and additional guided meditation recordings provided.	Prospective observational study	N = 26 Low socioeconomic smokers Recruited through parent study with same setting (see above)	-Phone call completion (recorded quit coach) -video completion (course evaluation and quit coach) -website time (logged via website) -minutes of daily meditation (meditation calendar) -mindfulness practice (self-report and course evaluation) -Demographics Questionnaire -Fagerstrom Test for Nicotine Dependence (baseline) -FFMQ -DASS Paired t-tests used for analysis of scores over time with logistic regression for	Significant results: Increases to FFMQ factors: observing (p.007), non-judging (p = 0.035), and composite score from baseline (p= 0.011) DASS decrease to anxiety from baseline (p = 0.49) Online video classes attended (mean = 5.55 out of 8 potential classes) Daily meditation reported (mean: 12.17 minutes with recommended 15 minutes/day for 4 weeks and 30 minutes/day for next 4 weeks) Intervention completion rate: 76.92% Potential tool to reach greater portion of population seeking

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
				continuous predictors of abstinence	<p>abstinence from smoking with minimal expense.</p> <p>Limitations: Small sample, no control group, recruited from scheduling conflict group, selection bias.</p>
<p>Grow, J. C., Collins, S. E., Harrop, E. N., & Marlatt, G. A. (2015). Enactment of home practice following mindfulness-based relapse prevention and its association with substance-use outcomes. <i>Addictive Behaviors, 40</i>, 16-20.</p>	<p>Participation in recent MBRP study will increase home practice of mindfulness meditation and be associated with decreased substance use and craving.</p> <p>Computerized questionnaires at 2-month and 4-month follow-up post-study</p>	<p>Post-study observational study</p>	<p>N = 93 Adults with SUD Completion of parent trial, excluded if psychosis, suicide risk, withdrawal risk present Substances abused: Alcohol (45.2%), cocaine/crack (36.2%), methamphetamine (13.7%), opiates/heroin (7.1%), marijuana (5.4%), and other (1.9%) Recruited from parent MBRP efficacy trial from a community treatment agency (outpatient and inpatient participants)</p>	<p>-Population-averaged generalized estimating equations used to determine home practice via self-reported hours (baseline, post-test, 2-month follow-up, 4-month follow-up) and if home practice predicted improved outcomes measures for substance use and craving (baseline, post-test, 2-month follow-up, 4-month follow-up)</p>	<p>Significant results: -MM utilized more over the course of the study (p<.001), but dropped off at the 2- and 4-month follow-up. -Substance use decreased over the course of the study (p<.001) -Craving decreased over the course of the study (p<.001) and associated with increased home practice leading to decreased cravings</p> <p>Each additional hour of home practice associated with 53% lower substance use</p> <p>Limitations: brief follow-up period, limited variability, attrition, did not factor in additional external self-management interventions</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Himmelstein, S., Saul, S., & Garcia-Romeu, A. (2015). Does mindfulness meditation increase effectiveness of substance abuse treatment with incarcerated youth? A pilot randomized controlled trial. <i>Mindfulness</i>, 6(6), 1472-1480.</p>	<p>Effectiveness of MM with incarcerated adolescents with SUD related to measures on self-esteem, attitudes toward substance use, locus of control, decision-making, mindfulness, and behavioral regulation.</p> <p>MM + TAU versus TAU groups (TAU = individualized psychotherapy) Weekly 90-minute modules for 12 weeks with encouragement to practice MM between weekly sessions</p>	<p>Randomized-controlled trail (pilot)</p>	<p>N = 44 Final n = 35 Incarcerated adolescents and met criteria for SUD Referred by mandated treatment program, presiding judge, detention camp staff at juvenile detention camp in San Francisco Bay Area</p>	<p>-MAAS self-report -Prison Locus of Control Scale self-report, modified for juveniles -Decision-making skills measure self-report -Rosenberg Self-Esteem Scale self-esteem -Monitoring the Future questionnaire (perceived risk of drug use) -Third-person observations gathered by detention camp staff related to behavioral regulation</p> <p>Analyzed with paired t tests to compare pretest and posttest self-report measures and independent t test used for significant differences between experimental and control groups</p>	<p>Significant results: -Increase in decision making skills ($p < 0.01$) and self-esteem ($p < 0.05$) for entire sample -MM group with greater increase to self-esteem ($p < 0.05$) -MM group with overall improved behavior with the control group showing decreases in this measure ($p < 0.05$)</p> <p>Potential advantage of individualized use of MM shown in this study</p> <p>Limitations: Small sample, confounding variables present related to setting, variability not controlled for in meditation practice, sample with lack of generalizability to female gender</p>
<p>Li, W., Howard, M. O., Garland, E. L., McGovern, P., & Lazar, M. (2017). Mindfulness treatment for substance misuse: A systematic review and meta-analysis. <i>Journal of Substance</i></p>	<p>Mindfulness treatments are effective in the treatment of substance abuse compared to traditional alternative treatments. There is a lack of research in this area that shows promise as a</p>	<p>Systematic review and meta-analysis</p>	<p>N(total) = 42 studies <i>Quasi-experimental</i> = 8, <i>RCTs</i> = 34</p> <p>N(initial) = 473 studies</p> <p>N(included for eligibility) = 93</p>	<p>Selection of studies, examination of outcome variables (e.g. decrease in substance misuse behavior, severity of misuse, cravings, post-treatment substance use-related problems,</p>	<p>Consistent positive outcomes for substance misuse treatment via mindfulness found across a wide range of studies. Small-to-large effects were observed concerning substance misuse,</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<i>Abuse Treatment, 75, 62-96.</i>	successful substance abuse intervention, however the effects of MBIs have shown to be effective in multiple treatment settings.			follow-up assessments), individual study data extraction and synthesis, study characterization, methodology characterization, effects of mindfulness treatment,	cravings, and stress when compared to alternative treatments. Substance abstinence was observed to increase at post-treatment and follow-ups. Mindfulness treatment may attenuate cravings by engaging metacognitive awareness of the craving experience and presence of urges – teaching patients to disengage attention from their trigger cues.
Mermelstein, L. C. & Garske, J. P. (2015). A brief mindfulness intervention for college student binge drinkers: A pilot study. <i>Psychology of Addictive Behaviors, 29</i> (2), 259.	After brief MBI and cue exposure protocol (and 4-week assessment) participants will have increased readiness to change alcohol abuse behaviors, alcohol refusal, and mindfulness scores versus a cue exposure only group. Experimental group: two different mindfulness meditation guided instruction with recordings given for commitment of at least 1 hr MM practice per week for 4 weeks with additional 25-minute	Controlled pilot trial	N = 76 Final: Experimental group = 37 Control group = 36 Recruited from online measure assessing alcohol usage with participants reporting at least one binge episode in the past 2-weeks, between ages 18-24, no current psychiatric diagnosis, college undergraduates in psychology courses Recruited from public university	-Demographic questionnaire -Daily Drinking Questionnaire -Rutgers Alcohol Problem Index -Drinking Refusal Self-Efficacy Questionnaire -Readiness to Change Questionnaire -FFMQ -Alcohol Timeline Followback Assessment -Participant rating form for mindfulness group -Normative Appetitive Picture System -Alcohol Urge Questionnaire	Significant results: -Increased self-efficacy in experimental group (p = .02) -Binge episodes 1.38 times greater in control group (p = .004) -Binge episodes in control estimated to be 2.24 times the rate of binge episodes versus experimental group -Increased dispositional mindfulness from baseline to 4-week assessment (4.64 average) for experimental group -Fewer consequences of alcohol use at 4-week follow-up reported by

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
	<p>guided session at 2-week assessment. Cue exposure protocol done during these interactions</p> <p>Control group: Only cue exposure protocol training with control group manipulation check</p>			<p>-Control group manipulation check</p> <p>-Mindfulness meditation tracking form</p> <p>Analyzed with generalized linear mixed models (GLMM)(change over time and efficacy), ANOVA (change by group over time)</p>	<p>experimental group (p = .04)</p> <p>Limitations: Most of the intervention done out-of-session and the need for follow-up assessment at greater length, no fidelity checks for guided intervention</p>
<p>Ruscio, A. C., Muench, C., Brede, E., & Waters, A. J. (2015). Effect of brief mindfulness practice on self-reported affect, craving, and smoking: a pilot randomized controlled trial using ecological momentary assessment. <i>Nicotine & Tobacco Research, 18</i>(1), 64-73.</p>	<p>BMP will reduce negative affect, craving, and smoking habit by self-report</p> <p>BMP group carried PDAs for 2-week period and instructed to meditate 20 minutes with PDA and to complete cognitive/affective assessment on device after. Random assessments required completion on PDA up to 4 times daily; Control group carried PDA as well, but completed sham training on device daily</p>	<p>Pilot parallel group randomized controlled trial</p>	<p>N = 44</p> <p>BMP group = 24</p> <p>Control group = 20</p> <p>Recruited through advertisements in Washington, DC metro area, age 18-65 years, 10 or more cigarettes smoked daily for at least 2 years</p>	<p>-PDA assessments (random and post-meditation assessments)</p> <p>-Saliva samples collected at baseline and follow-up for cotinine values (1 week, 2 week)</p> <p>-Breath CO measured at baseline and 2nd week)</p> <p>-Smoking diary self-report</p> <p>-Wisconsin Inventory of Smoking Dependence Motives</p> <p>-The Positive and Negative Affect Schedule</p> <p>Analyzed using linear mixed models (LMM)</p>	<p>Significant results:</p> <p>-BMP group reported decreased craving versus control group reporting higher cravings (p = 0.04)</p> <p>-BMP group with reduced negative affect (2.43 units lower)</p> <p>-BMP group reported reduced smoking amount (p = .0004)</p> <p>Limitations: recruitment biased towards those already interested in meditation, technology aspect may not be generalizable to broad population, smoking abstinence not a feature of this study, small sample size</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Tang, Y. Y., Tang, R., & Posner, M. I. (2016). Mindfulness meditation improves emotion regulation and reduces drug abuse. <i>Drug and Alcohol Dependence</i>, 163, S13-S18.</p>	<p>Is increased anterior cingulate cortex (ACC)/adjacent prefrontal cortex (mPFC) activity related to better self-control abilities in executive functions, emotional regulation, and stress response in individuals with addiction</p> <p>Brief mindfulness training for 5-day period versus relaxation training control group (same time period)</p>	<p>Randomized, controlled trial series</p>	<p>Multiple studies cited in this review of a series of RCTs orchestrated by author. Most studies n < 50 participants</p>	<p>-Positive and Negative Affect Schedule for emotion regulation -Profile of Mood States for emotion regulation -Salivary cortisol for stress response -fMRI for brain functional and structural changes</p>	<p>Significant results: Across multiple RCTs, it was found that: -Increased connectivity and activity in ACC/mPFC regions related to emotion regulation -Thought to also increase self-control behaviors associated with addiction</p> <p>Limitations: Small samples, need for longitudinal study designs</p>
<p>Valls-Serrano, C., Caracuel, A., & Verdejo-Garcia, A. (2016). Goal management training and mindfulness meditation improve executive functions and transfer to ecological tasks of daily life in polysubstance users enrolled in therapeutic community treatment. <i>Drug and Alcohol Dependence</i>, 165, 9-14.</p>	<p>Does GMT + MM improve executive function in polysubstance abusers in outpatient treatment setting</p> <p>GMT + MM group with 8-week trial versus TAU group</p>	<p>Randomized, controlled trial</p>	<p>N = 32 GMT + MM group = 16 TAU group = 16 Required SUD diagnosis, minimum abstinence of 15 days, not taking prescription drugs that impact CNS, no diseases/conditions impacting CNS, no co-morbid axis I diagnosis besides nicotine.</p> <p>Recruited from two therapeutic communities located in Granada and Malaga, Spain</p>	<p>-WAIS-III: letter-numbering sequence for working memory -Stroop: color-word interference test for response inhibition -Information sampling test for assessment of impulsivity -Stocking of Cambridge for cognition -Ecological measures of planning and multitasking -BADS: Zoo map test for planning assessment -Revised strategy application test for multitasking</p>	<p>Significant results: -GMT + MM group with improvement to working memory (p = 0.009) -GMT + MM group with improvement to reflection-impulsivity/decision-making abilities (p = 0.033) -GMT + MM group with improvement to daily life activities performance (p = 0.010)</p> <p>-In combination, thought to overall reduce stress levels</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
				<p>-Multiple errands test for plan implementation</p> <p>Analyzed with Statistical Package for the Social Science (SPSS), t test for quantitative variables, U-Mann Whitney, Chi square, and ANOVAs</p>	<p>Limitations: Small sample, no follow-up measures collected, hard to differentiate findings between MM and GMT</p>
<p>Witkiewitz, K. & Bowen, S. (2010). Depression, craving, and substance use following a randomized trial of mindfulness-based relapse prevention. <i>Journal of consulting and clinical psychology</i>, 78(3), 362.</p>	<p>Assessment of relationship of depressive symptoms, craving, and substance use after MBRP</p> <p>MBRP group with eight weekly sessions (2 hours each) and expected to practice daily meditation between sessions over eight weeks versus TAU group</p>	<p>Randomized, controlled trial</p>	<p>N = 168 Recruited from private, nonprofit public service agency with inpatient and outpatient clients enrolled for SUD. Required to have completed treatment within previous 2 weeks, excluding: psychosis, dementia, suicide risk, withdrawal risk, poor compliance</p>	<p>-Timeline Followback to assess alcohol/drug use -Penn Alcohol Craving Scale, adapted to include craving -Beck Depression Inventory-II assessing for depressive symptoms</p> <p>Analyzed with Mplus version 5.2, full information maximum likelihood (FIML), moderated mediation analyses</p>	<p>Significant results: -Intervention assignment and postintervention levels of depression related to craving -Craving and postintervention depression predicted total days of use</p> <p>Limitations: Need for more extensive follow-up period, more than half of participants in each group with court-mandated treatment = bias towards abstinence, disparate levels of training for therapists</p>
<p>Zgierska, A., Rabago, D., Chawla, N., Kushner, K., Koehler, R., & Marlatt, A. (2009). Mindfulness meditation for substance</p>	<p>Relapse is commonly seen in patients actively treating SUDs. Preliminary evidence points towards the</p>	<p>Systematic review</p>	<p>N(included) = 25 22 published, 3 unpublished</p>	<p>Selection criteria: mindfulness or mindfulness meditation-based therapies for substance abuse.</p>	<p>This is the first systematic review of MM for treatment of SUDs.</p>

Author / Article	Hypothesis	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>use disorders: A systematic review. Substance Abuse, 30(4), 266-294.</p>	<p>effectiveness of MM as a treatment of SUDs. However it is still unclear as to the population that may benefit most from MM. Future studies of efficient sample size are necessary to fully analyze the outcome of this intervention method – and should focus on both assessment of effect size and mechanisms of action.</p>		<p>N(initial) = 2000 eligible abstracts</p>	<p>A longitudinal study with pre- and post-intervention assessments.</p> <p>Exclusion criteria: Lack of sufficient study description. Non-English studies. Only interim-results of unpublished studies available.</p> <p>Eligible studies were identified, data was extracted and assessed.</p>	<p>Some positive outcomes were found in most studies analyzed.</p> <p>Overall illustration of <i>how</i> MM has been utilized both historically and clinically. Methodology lacks strength in control and randomization, however, but shows promise as an efficient treatment for SUDs.</p> <p>Future research directions are offered and include development of standardized parameters for using MM in future studies, a comprehensive conceptual model of possible underlying mechanisms of MM effectiveness in SUD intervention, and recommendations for how to implement MM in clinical settings of addiction.</p>

APPENDIX B:
PROJECT DESIGN

Project Design

Phase 1

Q1 Accomplish: Ascertaining baseline knowledge and perceptions of MM.

Q2 Measure: Survey, quantification and analysis of survey results.

Q3 Change to Improve: Survey results.

1. *Plan:* Synthesize survey to assess baseline knowledge and perceptions of MM for behavioral health prescribers and therapists.
2. *Do:* Launch survey.
3. *Study:* Analyze the results of the surveys to determine baseline scores.
4. *Act:* Gather analyzed data to prepare for next cycle.

Phase 2

Q1 Accomplish: Educational workshop to raise knowledge and perception metrics of behavioral health prescribers and therapists.

Q2 Measure: Post-intervention survey, quantification and analysis of survey results.

Q3 Change to Improve: Analysis of post-intervention survey.

1. *Plan:* Educational workshop development with post-intervention survey.
2. *Do:* Launch educational workshop with post-intervention survey.
3. *Study:* Analyze the outcomes from post-intervention survey.
4. *Act:* Determine strengths and weaknesses and begin planning for phase 3.

Phase 3

Q1 Accomplish: Did the results from the last phase lead to a sustained increase in perception/knowledge of behavioral health prescribers and therapists and is there an increased utilization of MM?

Q2 Measure: Survey, quantification and analysis of survey results.

Q3 Change to Improve: Survey results.

1. *Plan:* Construct a survey for 1-month post-intervention.
2. *Do:* Launch survey.
3. *Study:* Analyze the results of the survey.
4. *Act:* Report on whether the intervention was successful in increasing knowledge/perception of behavioral health prescribers and therapists on MM and whether it is being utilized more. Will also analyze strengths and weaknesses for recommendations going forward.

APPENDIX C:
MINDFULNESS MEDITATION:
PRE- AND POST- AND FOLLOW-UP SURVEYS

Mindfulness Meditation Pre-Survey

1. How would you rank your current knowledge on mindfulness meditation?
 - i. None at all
 - ii. Little
 - iii. Moderate
 - iv. Above average
 - v. Expert

2. Mindfulness meditation has a place as a complementary and alternative method for therapeutic treatment in behavioral health:
 - i. Strongly disagree
 - ii. Disagree
 - iii. Neither agree nor disagree
 - iv. Agree
 - v. Strongly agree

3. In my current practice, I recommended mindfulness meditation to _____ of my clients.
 - i. None
 - ii. Few
 - iii. About half
 - iv. More than half
 - v. All, or almost all

4. In my current practice, I demonstrated mindfulness meditation to _____ of my clients.
 - i. None
 - ii. Few
 - iii. About half
 - iv. More than half
 - v. All, or almost all

5. With more education on mindfulness meditation, would you consider utilizing it in practice?
 - i. Never
 - ii. Rarely
 - iii. About half the time
 - iv. More than half the time
 - v. Always

Additional:

Are you a prescriber or therapist? (Circle one)

How many years have you been practicing in this role? _____

Mindfulness Meditation Post-Survey

1. How would you rank your current knowledge on mindfulness meditation?
 - i. None at All
 - ii. Little
 - iii. Moderate
 - iv. Above Average
 - v. Expert

2. Mindfulness meditation has a place as a complementary and alternative method for therapeutic treatment in behavioral health:
 - i. Strongly disagree
 - ii. Disagree
 - iii. Neither agree nor disagree
 - iv. Agree
 - v. Strongly agree

3. I plan on recommending mindfulness meditation to clients:
 - i. Never
 - ii. Rarely
 - iii. About half the time
 - iv. More than half the time
 - v. Always

4. I plan on demonstrating mindfulness meditation to clients:
 - i. Never
 - ii. Rarely
 - iii. About half the time
 - iv. More than half the time
 - v. Always

5. I can see the potential benefit of mindfulness meditation incorporated into the treatment plan for opioid abuse:
 - i. Never
 - ii. Rarely
 - iii. About half the time
 - iv. More than half the time
 - v. Always

Additional:

What did you like about the presentation?

What could be improved about the presentation?

Mindfulness Meditation 2- Week Follow-Up Survey

1. How would you rank your current knowledge on mindfulness meditation?
 - i. None at all
 - ii. Little
 - iii. Moderate
 - iv. Above Average
 - v. Expert

2. Mindfulness meditation has a place as a complementary and alternative method for therapeutic treatment in behavioral health:
 - i. Strongly disagree
 - ii. Disagree
 - iii. Neither agree nor disagree
 - iv. Agree
 - v. Strongly agree

3. Since the educational workshop on mindfulness meditation, I have recommended mindfulness meditation to:
 - i. None
 - ii. 1 – 5 clients
 - iii. 6 – 10 clients
 - iv. 11 – 15 clients
 - v. More than 15 clients

4. Since the educational workshop on mindfulness meditation, I have demonstrated mindfulness meditation to:
 - i. None
 - ii. 1 – 5 clients
 - iii. 6 – 10 clients
 - iv. 11 – 15 clients
 - v. More than 15 clients

5. Since the educational workshop on mindfulness meditation, I have incorporated mindfulness meditation into the treatment plan for opioid abuse to:
 - i. No one
 - ii. 1 – 5 clients
 - iii. 6 – 10 clients
 - iv. 11 – 15 clients
 - v. More than 15 clients

Additional:

APPENDIX D:
EDUCATIONAL WORKSHOP

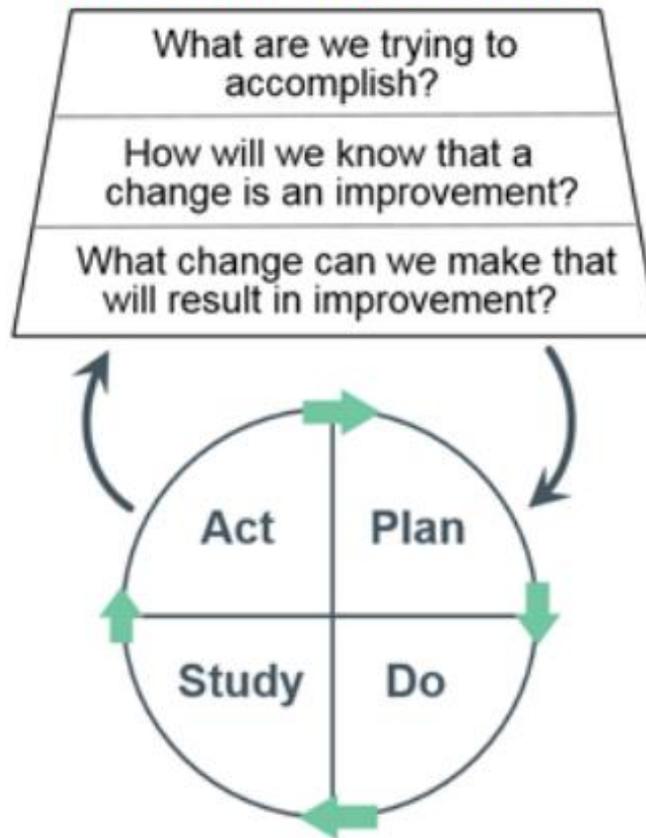
Educational Workshop

Mindfulness Meditation Presentation	
Brief History of Meditation and Mindfulness	Introduction to meditation and how it became a focus of study.
The Benefits of MM	Information on the observed benefits of meditation in general.
Current therapies that incorporate MM	A brief summary of therapies that incorporate MM
The role of MM in Addiction	The Brain Addiction Model and review of literature.
MM and Opioid Abuse Treatment	Review of literature and the place of MM in opioid abuse treatment.
Mindfulness Meditation Technique	The basic steps on how to practice mindfulness meditation.
Group Meditation Demonstration (5 minutes length)	Guided group meditation demonstration.
Questions	Time for questions on the presentation and demonstration.
Survey	Post-educational session survey to compare to baseline survey.

APPENDIX E:
MODEL FOR IMPROVEMENT

Model for Improvement

Model for Improvement



Institute for Healthcare Improvement (*IHI*). (n.d.). *How to Improve*. Retrieved February 06, 2019, from <http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx>.

APPENDIX F:
THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL
LETTER



Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://gsu.arizona.edu/compliance/home>

Date: September 26, 2019

Principal Investigator: Phillip Stensrud

Protocol Number: 1909000299

Protocol Title: Mindfulness Meditation For Opioid Addiction In An Outpatient
Psychiatric Setting

Determination: Human Subjects Review not Required

Documents Reviewed Concurrently:

HSPP Forms/Correspondence: *Stensrud_Human-DeterminationForm (2).pdf*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(l): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX G:
SITE AUTHORIZATION LETTER



June 10th, 2019

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St
Tucson, AZ 85721

Please note that Mr. Phillip Stensrud, UA Doctor of Nursing Practice student enrolled in the Psychiatric/Mental Health program, has permission of MHC Healthcare to conduct a quality improvement project at our facility for his project, "Mindfulness Meditation for Opioid Addiction in an Outpatient Psychiatric Setting".

Mr. Stensrud will conduct a survey and educational workshop for behavioral health providers and therapists at the MHC Healthcare behavioral health clinic. He will recruit providers and therapists in-person at MHC Healthcare and will provide documentation with a description of the project, what they will be asked to do, the time involved, and a pre-survey. Mr. Stensrud's activities will be completed by *September 30th, 2019*.

Mr. Stensrud has agreed to provide to my office a copy of the University of Arizona Determination before he recruits participants. He will also present aggregate results to the providers and therapists at their monthly staff meeting.

If there are any questions, please contact my office.

Signed,

Jon Reardon, LCSW
Chief of Clinical Behavioral Health

APPENDIX H:
MINDFULNESS MEDITATION HANDOUT



Mindfulness Meditation Handout



Whilst there are many ways to practice Mindfulness, formal sitting **Meditation** is probably the most popular. **Mindfulness Meditation** involves paying attention and being in the present moment without judgment.

That doesn't sound too difficult, how do I do this?

To practice **Mindfulness Meditation** you might like sit in a comfortable position. Close your eyes and count slowly from 10 – 1 breathing in time with each count. Your mind should feel a little calmer. Now we will begin!

Mindfulness begins when we are in the present moment. To come to the present it is best to try and focus on your breath. Just sit as still as possible and focus on your breath. You might find at times your mind wanders. This is normal. Whenever you notice that your mind has drifted off, gently and without judging yourself, resume focusing solely on your breath.

Try this technique for 5 minutes and increase it every day for 1 minute. It gets easier over time so if you find it hard initially you are HUMAN!

For more information, check out Mindful.org

In addition, general mindfulness research shows an impact on



Sleep



Weight loss



Relationships



Chronic disease



Pain

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