MINDFULNESS-BASED EDUCATION FOR STAFF PROVIDING SERVICES TO MEDICATION-ASSISTED TREATMENT PATIENTS

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by Paulina Alicia Zapata, titled Mindfulness-Based Education for Staff Providing Services to Medication-Assisted Treatment Patients and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

I hereby certify that I have read this DNP project prepared under my direction and recommend that it be accepted as fulfilling the DNP project requirement.

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DEDICATION

To my mom, who has taught me what it is to work hard

To my husband, who has helped me to build a solid foundation for our children

To my children, who have been my motivation to succeed

You have all inspired me in so many ways, and you have been

My reasons for pushing through and becoming who I am today.

I love you all, and I am grateful every day for each of you

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ABSTRACT

Purpose

The purpose of this quality improvement project was to improve provider and staff knowledge, self-efficacy, and beliefs about the benefits of mindfulness-based interventions for use with patients enrolled in medication-assisted treatment programs in southern Arizona.

Background

In America, one in 12 people will be diagnosed with a substance use disorder at some point in their life. Additionally, overdose deaths from opioids and synthetic opioids such as fentanyl are on the rise in Arizona. While there are many treatment options for patients suffering from substance use disorders, including medication-assisted treatment, adjunct treatment options like mindfulness-based interventions are minimally utilized, possibly due to poor perception of their effectiveness.

Methods

The Model for Improvement and Nola Pender's Health Promotion Model guided the process of this quality improvement project, which followed a quantitative descriptive design. A pre-survey was electronically distributed to staff members at a rural health clinic in Marana, Arizona, to assess their knowledge, self-efficacy, attitudes, and use of mindfulness-based interventions, followed by a narrated PowerPoint presentation about the history and benefits of mindfulness-based interventions. Approximately one month later, participants were sent an electronic post-survey to re-assess their knowledge, self-efficacy, attitudes, and use of mindfulness-based interventions. The target populations in the quality improvement project were primary care providers, behavioral health registered nurses, primary care registered nurses,

behavioral health recovery coaches, behavioral health medical assistants, and primary care medical assistants.

Results

Data collection took place over one month. Four participants completed the pre-survey, all of which were female. Three participants completed the post-survey. There were decreases seen in knowledge, attitudes, and self-efficacy. Personal and professional use of mindfulness-used interventions improved from pre-survey to post-survey.

Conclusions

Through brief educational interventions about mindfulness-based interventions, improvements in staff providing services to patients in medication-assisted treatment can be accomplished. The intervention in this quality improvement project yielded improvements in the use of personal and professional use of MBIs. With more in-depth interventions, it may be possible to net improvements in other areas to include knowledge, self-efficacy, and attitudes of MBIs.

INTRODUCTION

Opioid-related overdose has increasingly become a national problem. In 2017, there were more than 72,000 overdoses, which involved opioids and a reported 22-fold increase in deaths involving fentanyl and other synthetic opioids from 2002 to 2017 in America (American Psychiatric Association [APA], 2019). Additionally, the National Institute on Drug Abuse (NIDA) reported that opioid-involved deaths have increased by 76% in Arizona since 2013 (NIDA, 2019). As the rates of opioid use have climbed in previous years, substance abuse has also become a financial burden in America. In the past, substance use has been associated with criminality and punishable by incarceration. However, most people are unaware that the cost of *treating* substance use has shown to be exponentially less than its alternate of incarcerating an addicted person (NIDA, 2018a). As an example, the cost of methadone treatment for one full year is approximately $4,700, while the cost of one full year of imprisonment is approximately $24,000 (NIDA, 2018a). Alternately, many patients struggling with addiction are learning to manage their symptoms and cravings through nonpharmacological interventions, which may contribute positively to the fiscal deficit in the healthcare industry.

Background Knowledge and Significance

Opioid use disorder (OUD), often termed *opioid addiction, opioid abuse, or opioid dependence,* is a pattern of opioid use that leads to clinically significant and problematic impairment in functioning and distress (Centers for Disease Control and Prevention [CDC], 2017). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), OUD is manifested by at least two of 11 symptoms of addiction, which occur within 12 months. The symptoms, as described by the DSM-5 criteria, include taking opioids for longer or in more

copious amounts than prescribed, craving or strong desires to use opioids, spending extended periods acquiring or using opioids, recurrent opioid use despite role obligations or physically hazardous situations, and developing signs or symptoms of tolerance or withdrawal (DSM-5, 2013).

The cost associated with untreated OUD can vary greatly but may be inclusive of factors such as medications to treat the addiction, criminal justice costs, medical bills related to treating babies born with opioid dependence, and treatments for infectious diseases, overdose, and injuries related to intoxication. In the United States (U.S.), substance abuse costs are over $600 billion (NIDA, 2018a). It was reported that in 2013, the costs of prescription opioid use disorders and overdoses in the U.S. was approximately $78 billion (NIDA, 2018b).

For many years, a treatment gap has existed for substance use. While there is a great need for treatment among addicted persons, very few receive it (NIDA, 2018a). However, treatment has been proven successful in the form of medication-assisted treatment (MAT), which is a combination of pharmacological therapy, counseling, and behavioral therapies. There are currently three drugs approved for MAT: buprenorphine, methadone, and naltrexone (Food and Drug Administration [FDA], 2019). Two of these drugs, buprenorphine, and methadone, pose risks for diversion and commonly result in relapse for OUD patients (Connery, 2015). For this and other reasons, some patients in recovery may elect to focus on nonpharmacological interventions to treat their diagnosis. Additionally, comorbidities such as depression, anxiety, and pain can include pharmacological interventions that are contraindicated with MAT-approved medications (Alexander, Kronk, Sekula, Short, & Abatemarco, 2019).

An alternate tool for prevention, reasonably new in the treatment of OUD, is mindfulness-based interventions (MBI), which encompass practices designed to allow patients to enter a state of mindfulness by becoming aware of and attentive to the present moment in a nonjudgmental perception and without thoughts of the past or future (Garland & Howard, 2018). MBI typically includes the practice of mindfulness meditation, which can vary in nature from focused breathing, yoga, or sensory awareness. Many studies have found MBIs to be effective in treating a variety of disorders and improving quality of life. A meta-analysis of MBI effectiveness completed by Goldberg et al. (2017) showed, on average, that MBIs are associated with decreased psychiatric symptoms. Similarly, Enos (2019) cites that mindfulness-oriented recovery enhancement (MORE) therapy has resulted in significant improvement for patients in recovery from substance abuse. In another study, it was found that mothers in treatment for OUD, typically at an increased risk for maladaptive parenting, showed improvements in parenting behaviors after mindfulness-based parenting interventions (Gannon, Mackenzie, Hand, Short, & Abatemarco, 2019).

Relative to healthcare and the practice of advanced nursing, MBIs are practical and useful means of reducing the opioid epidemic. The use of MBIs can have tremendous positive impacts on the quality of life for patients in recovery. According to Tang, Tang, and Posner (2016), emotional dysregulation is the main culprit in impulsivity and poor behavior choices. Emotional regulation occurs in various parts of the brain, which include the ventral part of the anterior cingulate cortex (ACC) and its adjacent medial prefrontal cortex (mPFC), both of which have shown to be positively affected by mindfulness meditation (Tang, Tang, & Posner, 2016).

Local Problem

Congruent with the opioid epidemic as a nation, Arizona faces many other challenges that put its population at risk for opioid abuse or overdose. In Arizona, despite state efforts to reduce opioid prescribing, prescriptions rates continue to be high. Approximately 36% of individuals suspected of overdosing have received ten or more opioid prescriptions in the past year (Arizona Department of Health Services [ADHS], 2019). On average, compared to other states, Arizona providers write 2.5 more opioid prescriptions for every 100 patients seen (CDC as cited by NIDA, 2019). Marana, a southern Arizona town with a population of about 41,720 as of 2017 (DataUSA, n.d.), is at an increased risk for substance use for several reasons, including its close proximity to the United States-Mexico border. Due to fewer legal restrictions related to back and forth movement at the border, Americans in these areas have more accessible and more affordable access to pharmaceuticals from Mexico (Cherpitel, 2016). Geographically, Marana is in Pima County, located northwest of Tucson. Marana's population consists of approximately 29% minorities. The poverty rate in Marana lies at about 8.2%. Approximately 94.5% of the population has health coverage, with about 8.85% of those on Medicaid (DataUSA, n.d.).

A steady increase in the death rates involving synthetic opioids, mainly fentanyl, has become an area of concern in Arizona. NIDA (2019) reported a sevenfold increase in deaths in 2012 of 36 to 267 in 2017. During that same time frame, the death rate from heroin overdoses increased from 101 to 334.

Lack of knowledge and poor beliefs and attitudes of MBIs is a barrier to its implementation in practice with MAT patients. Results of a focus group showed that OUD

patients have concerns with costs associated with such treatments, scheduling conflicts, and a possible lack of provider empathy (Jones et al., 2019).

Intended Improvement

Project Purpose

The purpose of this quality improvement (QI) project was to improve provider and staff knowledge, self-efficacy, and beliefs about the benefits of mindfulness-based interventions for use with patients enrolled in medication-assisted treatment programs in southern Arizona. The potential benefits included improving quality of life (QOL), increasing emotional regulation, a positive alternate intervention to pharmacological interventions, and decreasing costs. As opioid misuse and abuse continue to increase, the importance of alternative treatments, including MBIs, becomes essential in overcoming addiction for many patients.

Improving provider and staff knowledge, self-efficacy, and beliefs about the benefits of MBIs can result in higher chances for implementation into everyday practice with OUD patients. Grow et al. (2015) found that the enactment of MBIs at home resulted in significantly lower alcohol and other drug use and cravings. Ultimately, the goal of improving provider and staff knowledge is to convey the importance of using MBIs in practice with MAT patients that can attain a wealth of benefits by incorporating these practices into their daily lives.

Project Question

Can an educational presentation for providers and staff at a medication-assisted treatment program in southern Arizona on the benefits of MBIs improve their knowledge, self-efficacy, and beliefs about these practices?

Specific Aims

This quality improvement (QI) project ultimately serves as a step towards improvement in the quality of life for MAT patients. As an alternative to medication or adjunct to treatment, MBIs can be quite useful in ensuring that patients continue a path to recovery. Through educating providers and staff on the importance of this method and based on web-based survey response rates of 65.9% (Labovitz, Patel, & Santander, 2017), the four specific aims of this quality improvement project were as follows:

Aim 1: At one-month post-intervention, 75% of the providers and staff will report an improvement in knowledge of MBIs

Aim 2: At one-month post-intervention, 75% of the providers and staff will report an improvement in self-efficacy of MBIs

Aim 3: At a one-month post-intervention, 75% of the providers and staff will report improved beliefs about MBIs

Aim 4: At one-month post-intervention, 75% of the providers and staff will report increased use of MBIs in personal and professional practice

Theoretical Framework

As a guide to this QI project, the student utilized the health promotion model (HPM), which was initially developed by Nola J. Pender in 1982, then revised in 1996 based on changing theoretical perspectives and empirical findings (Pender, Murdaugh, & Parsons, 2011). This theoretical framework revolves around three areas of focus: individual characteristics and experiences, behavior-specific cognitions and affect, and behavior outcomes (Nursing Theory, 2016).

Individual Characteristics and Experiences

Individual characteristics and experiences refer to personal factors and prior related behavior that affect subsequent actions. Previous behaviors are indicative of the likelihood of engaging in health-promoting acts. When a person participates in health-promoting behaviors regularly, or out of habit, it can be expected that they will have a positive perception of the behavior, and hence, continue to engage (Murdaugh, Parsons, & Pender, 2019).

Behavior-Specific Cognitions and Affect

Behavior-specific cognitions and affect are components that are highly significant motivators and can be modified through interventions. Included in this category are perceived benefits and barriers to action, self-efficacy, activity-related affect, interpersonal influences, and situational influences (Murdaugh, Parsons, & Pender, 2019).

Behavior outcomes. These outcomes in the HPM are expected to be positive health-promoting behaviors that result in improved health, enhanced functional ability, and better quality of life (Murdaugh, Parsons, & Pender, 2019).

The basis for the HPM is to be utilized as a framework for integrating nursing and behavioral science perspectives with factors that predict health behaviors and provides a way to explore the processes which motivate individuals to engage in practices for the betterment of their health and well-being (Murdaugh, Parsons, & Pender, 2019). There are two theoretical roots of HPM. The first, *expectancy-value theory*, attests that people engage in actions that are perceived as possible and result in valuable outcomes. The second is the *social cognitive theory* that a person must alter how they think to change how they behave (Pender, Murdaugh, & Parsons, 2011).

The primary constructs of the HPM utilized for guidance in this QI project were perceived benefits and barriers of actions, perceived self-efficacy, and interpersonal influences. These components, which fall under the HPM's umbrella of behavior-specific cognitions and affect, were used to measure variables and evaluate changes following the intervention (Murdaugh, Parsons, & Pender, 2019). The use of this framework in an outpatient setting for MAT patients helped the student determine the knowledge, level of self-efficacy, and beliefs about MBIs of the healthcare providers and staff.

Perceived Benefits

In the HPM, one's beliefs about the positive consequences of performing a behavior are termed *perceived benefits*. Perceived benefits can be intrinsic or extrinsic. Intrinsic benefits provide internal satisfaction such as energy or feelings of attractiveness, whereas extrinsic benefits are externalized as in monetary rewards for positive behaviors.

Perceived Barriers

Perceived barriers are negative beliefs about the positive or reinforcing consequences of performing an action. Such views may include inconvenience, expense, difficulty, or time-consumption (Murdaugh, Parsons, & Pender, 2019). By determining the providers and staff's perceived benefits and barriers to engaging in MBIs, the student determined likelihood of engagement.

Perceived Self-Efficacy

Perceived self-efficacy refers to a person's beliefs about their capability to carry out behaviors. The HPM states that a person with perceptions of skill and competence will be more likely to engage in actions in which they will excel (Murdaugh, Parsons, & Pender, 2019). By

reinforcing the benefits of MBIs and providing adequate education to healthcare providers and staff, the student aimed to improve the providers and staff's perceived self-efficacy, allowing them to be more likely to share this information with their patients.

Interpersonal Influences

Interpersonal influences are the cognitions involving behaviors, beliefs, or attitudes of others, and typical sources are family, peers, and health care providers and staff. Through improved providers and staff perception of MBIs, the student aimed to increase the likelihood that such interventions will be promoted to patients. As the opinions of healthcare providers are often highly praised, the patients will be more willing to engage in MBIs as well.

Situational Influences

Situational influences are personal thoughts that can facilitate or impede behavior. Situational influences may include environmental factors such as the location of the proposed change (Nursing Theory, 2016).

Other studies have successfully used the HPM to predict the likelihood of change in patient behaviors. Kamran, Azadbakht, Sharifirad, Mahaki, and Mohebi (2015) utilized the HPM to promote self-care in patients with hypertension through the use of a survey aimed at determining patient perceptions about their diagnosis. Another study used the constructs of Pender's HPM as a framework for planning interventions to anticipate, improve, and modify behaviors related to loneliness in older women. The study used the HPM to determine perceptions about loneliness. After analyzing the data, which was provided by questionnaires, the researchers developed an intervention plan, which focused on eliminating barriers to stop loneliness as well as increase self-efficacy and interpersonal influences. The findings from the

study were that the intervention group had a decrease in perceived benefits of social isolation and an increase in barriers to stop loneliness, perceived social self-efficacy, and interpersonal influences (Alaviani, Khosravan, Alami, & Moshki, 2015). One other study utilized Pender's HPM to change the nutritional behaviors and improve dietary patterns of pregnant women.

Commitment to Plans

A prime intervention, along with providing educational sessions, in the study was to have patients give a 3-day food intake record at designated points throughout the study—this reinforced *commitment to plans*, which is a critical factor in the HPM. Pender's HPM proposes that a more significant commitment to a plan of action is more likely to lead to health-promoting behaviors and their sustainability (Pender, Murdaugh, & Parsons, 2011).

The role of healthcare providers in promoting health is essential to improving outcomes for patients. Health education and health promotion have progressed from healthcare professionals providing information they think patients should know to guide the decision-making process (Pender, Murdaugh, & Parsons, 2011). If healthcare providers and staff gain a real understanding and positive perspective about MBIs, they will be more inclined to promote their benefits and use in practice. Similar to this assumption, Kassa, Human, and Gemeda (2018) offered support that practitioners, in general, will not practice what they do not know. In their Ethiopian study, they assessed the likelihood of providers promoting preconception care based on their current knowledge of the evidence-based intervention. The study found that the providers with higher levels of self-efficacy and knowledge of the intervention were consistent with those that reported utilizing the intervention in practice (Kassa, Human, & Gemeda, 2018).

As such, the student for this QI project sought to broaden healthcare provider and staff knowledge as a means to increase MBI promotion with their patients.

Literature Synthesis

Evidence Search

A literature search relating to mindfulness-based interventions for opioid use disorder was conducted within PubMed, PsycINFO, and CINAHL databases. The key terms utilized in the searches were “mindfulness,” “meditation,” “substance abuse,” and “opioid or opioid use disorder.” Search criteria were limited to free full text, human studies within the past five years.

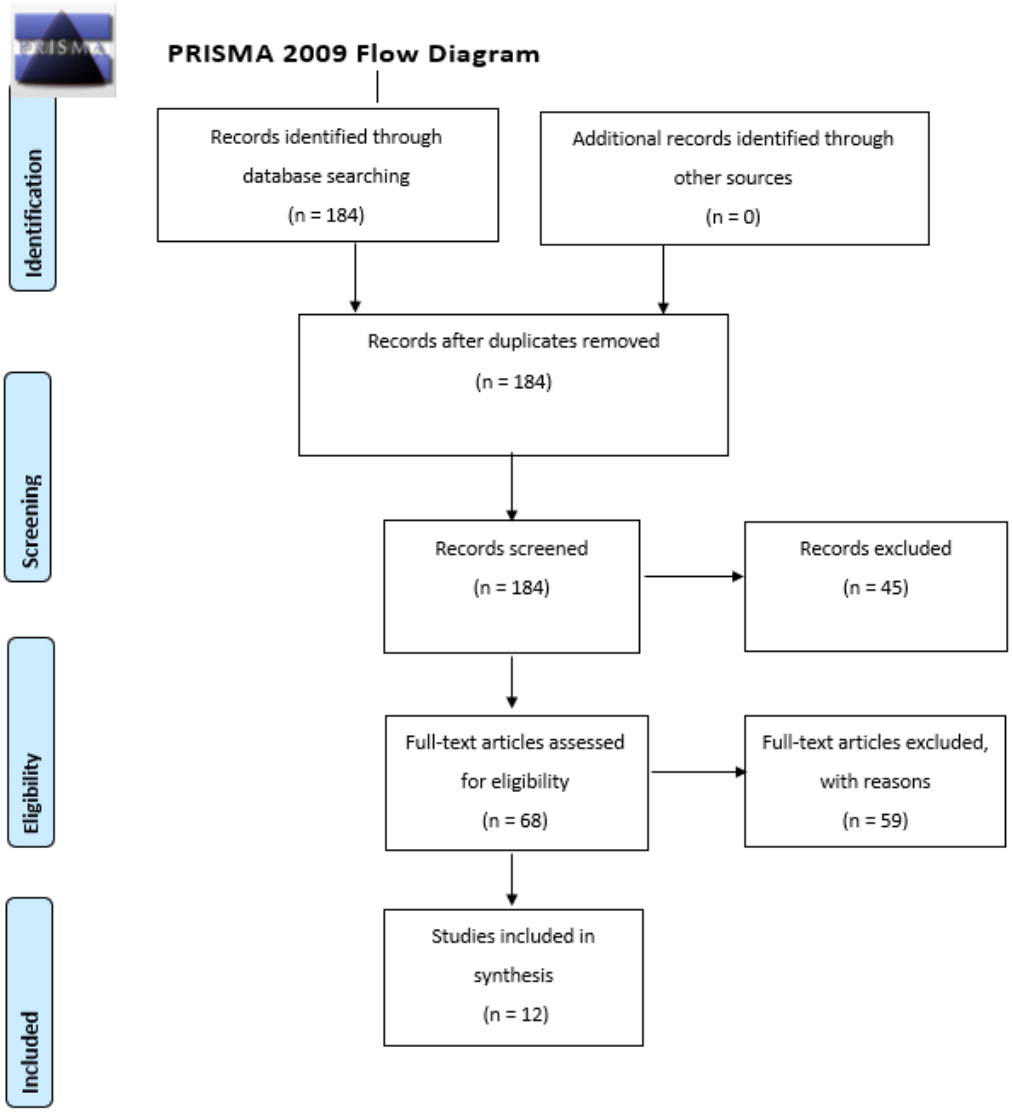
Using the PubMed database, the terms “meditation” and “substance abuse” yielded 147 articles. A further restricting search of terms including the addition of “opioid” resulted in 37 articles. After reviewing the articles for relevance in relation to the QI project and the validity of the results, seven were determined to meet the criteria.

The database search for PsycINFO using the terms “mindfulness meditation” and “substance use disorder” resulted in 24 results, of which three were relevant to the quality improvement project. However, two of the studies were excluded based on inconclusive findings.

Utilizing the same search criteria, the CINAHL search provided 15 articles. Eight sources were excluded as they were non-specific to the project. Of the remaining seven studies, four were determined to be relevant and were examined for the purpose of supporting the quality improvement project. In total, 12 articles of literature were synthesized for use in this quality improvement project.

Figure 1

PRISMA 2009 Flow Diagram



Comprehensive Appraisal of Evidence

The remaining sources of literature were analyzed and showed that there are many benefits to incorporating mindfulness-based interventions into practice with patients being treated for opioid use disorder. However, results from three of the studies showed that

mindfulness-based interventions provide benefits, but only in conjunction with other therapeutic modalities (Goldberg et al., 2017; Grow et al., 2015; Wielgosz, Goldberg et al., 2019). Reports from two of the studies were that, historically, the practice of mindfulness meditation had been shown to have positive outcomes (Garland & Howard, 2018; Johnson, 2019).

In the past, mindfulness-based interventions, including meditation, are shown to be beneficial to patients undergoing treatment for addiction (Johnson, 2019). In the literature review by Johnson (2019), it was noted that a wide variety of treatment applications had been implemented which support mindfulness as a successful modality for substance abuse treatment. Studies have shown mindfulness-based stress reduction (MBSR) courses to be effective in reducing physical and mental symptoms (Karbat-Zinn as cited by Johnson, 2019).

Felder et al. (2012) studied a combined approach of mindfulness-based interventions and cognitive behavior therapy (CBT), which ultimately became known as mindfulness-based cognitive therapy (MBCT). This technique was proven to be useful in treating depression by providing patients a strong sense of self-awareness in which they were able to use towards weakening negative thoughts (Johnson, 2019). A study by Alexander et al. (2019) also found that mindfulness-based interventions significantly decreased depression in women being treated for opioid use disorder (OUD). Women being treated for OUD are at an increased risk for maladaptive parenting. Another study that examined the impact of mindfulness-based parenting on women being treated for OUD also showed significant improvements in the quality of parenting behaviors (Gannon, Mackenzie, Kaltenbach & Abatemarco, 2017).

Mindfulness-based relapse prevention (MBRP), a program developed specifically to address addictive behaviors including cravings, negative thoughts and emotions, and substance

abuse, was initially piloted in 2014 with 168 patients and showed significant decreases in overall substance use post-intervention (Johnson, 2019). Likewise, mindfulness training for smokers (MTS) has been found to reduce addiction-related symptoms by improving mood and emotion dysregulation (Priddy et al., 2018). Tang et al. (2016) explored the connection between drug abuse and emotional dysregulation relative to brain mechanisms using integrative body-mind training (IBMT), a form of mindfulness meditation. Their study found that mindfulness meditation resulted in an increase in activity in the anterior cingulate cortex (ACC) and prefrontal cortex (mPFC) areas of the brain, those that play a role in self-control, emotional dysregulation, and stress reactivity. This promotion of emotion regulation and improvement of self-control is thought to help in the prevention and treatment of addiction (Tang, Tang, & Posner, 2016). Mindfulness meditation may improve one's ability to recognize emotional states and allow better emotion regulation through conscious control (Lutz et al., as cited by Wielgosz et al., 2019).

Similar to results presented by Johnson (2019), Garland and Howard (2018) concurred that mindfulness-based interventions including MBSR, MBCT, and mindfulness-oriented recovery enhancement (MORE) proved to be therapeutic for patients in treatment for addiction. One study suggests that MORE treatment leads to a significant reduction in pain severity and emotional reactivity as well as an increase in perceived control over pain (Eilander, Ketchen, Maremmani, Saenger & Fareed, 2016). Patients receiving MORE treatment, surprisingly, reported more cravings post-intervention due to their enhanced awareness of cravings. However, they also reported an increased ability to regulate the cravings (Enos, 2019). A meta-analysis of 34 RCTs suggested that mindfulness-based interventions are a promising treatment for patients

in recovery (Garland & Howard, 2018). Priddy et al. (2018) argue that mindfulness is particularly suited for relapse prevention.

Numerous studies suggest that MBIs are, undoubtedly, useful in treating substance use disorders as well as many other disorders. However, much of the research suggests that MBIs alone are either insufficient as treatment options or were equivalent to first-line, evidence-based therapies such as CBT or antidepressant medications (Goldberg et al., 2018; Grow et al., 2015; Wielgosz et al., 2019). Grow et al. (2015) recommended that MBRP, while useful as a treatment alone, was not sustained long-term and should be implemented post-intervention as a support group to enhance its benefits.

Strengths of Evidence

The literature analysis provides a variety of studies in which MBIs are utilized in practice and shown to be effective in treating patients with substance use disorder. The historical use of mindfulness meditation, in general, is significant in solidifying its place in health promotion. An increase in self-awareness as reported by participants (Priddy et al., 2018; Johnson, 2019; Enos, 2019) adds to the validity of MBIs as a useful tool in the treatment of addiction. A diverse sample including mixed genders, a variety of diagnoses, and different age groups in which many of them displayed some level of benefit from MBIs signifies that this treatment modality may be clinically useful for OUD/SUD patients. By introducing mindfulness-based interventions to the entire treatment team, including the patient's recovery coach and primary care provider, a holistic approach that utilizes alternate methods in treatment can enhance the patient's positive treatment outcomes. Engaging the treatment team from a variety of angles ensures that the patient will be more compliant with treatment and more open to nonpharmacological interventions.

Additionally, mindfulness-based interventions are treatments that the providers and staff can engage in with the patient to enhance the patient-provider relationship and overall well-being for both.

Weaknesses of Evidence

Although MBIs have started being utilized more in clinical practice, they are still relatively new in the treatment of substance use. The research to support the use of MBIs in practice is limited, most within the past decade (Garland & Howard, 2018).

Gaps and Limitations

In searching for literature to analyze, there were limited sources related to providers and staff knowledge or provider and staff perceptions about MBIs, which may be indicative of a need for further outreach about the benefits of MBIs. One source of literature was located, which examined the findings of a focus group of OUD patients and their perceptions about MBIs. Two of the significant findings from the focus group were that they had concerns that lack of empathy by a trainer without a history of substance use would be a barrier and that monetary stress related to MBI treatments would impede services (Jones et al., 2019).

METHODS

Project Design

This quality improvement (QI) project was designed to improve the knowledge, self-efficacy, and beliefs about MBIs among primary care providers, behavioral health recovery coaches, nurses, and medical assistants in an outpatient rural-based medication-assisted treatment facility. Following a quantitative descriptive study design and utilizing survey methods, the student intended to attain baseline data from participants, followed by presenting an educational

presentation. Approximately one month after completion of the educational presentation, the student gathered data and assessed for improvements in knowledge, self-efficacy, and beliefs about MBIs.

Model for Implementation

Following the Institute of Healthcare Improvement's (IHI) recommended Model for Improvement, created by Langley et al. (2009), the student identified the aims of the project, developed outcome measures, and provided suggestions for change that will result in improvements (IHI, 2020). The specific aims of this quality improvement were: 1) At one-month post-intervention, 75% of the providers and staff will report an improvement in knowledge of MBIs; 2) at one-month post-intervention, 75% of the providers and staff will report an improvement in self-efficacy of MBIs; 3) at one-month post-intervention, 75% of the providers and staff will report improved beliefs about MBIs; and, 4) at one-month post-intervention, 75% of the providers and staff will report increased use of MBIs in personal and professional practice.

As part of the IHI's Model for Improvement, the student implemented strategies using the plan-do-study-act (PDSA) cycle. In the realm of *planning*, the student obtained the necessary approvals to complete a quality improvement project (Appendix A). The student prepared an educational PowerPoint presentation to be used as the intervention (Appendix E).

The next step in the PDSA was be *doing*, which, in this QI project, encompassed delivering the electronic educational presentation directed towards improving provider and staff knowledge, self-efficacy, and beliefs about MBIs. More specifically, the student created a PowerPoint presentation about the history, benefits, and practice of mindfulness-based interventions based on the literature (Appendix E). During the presentation, the student guided

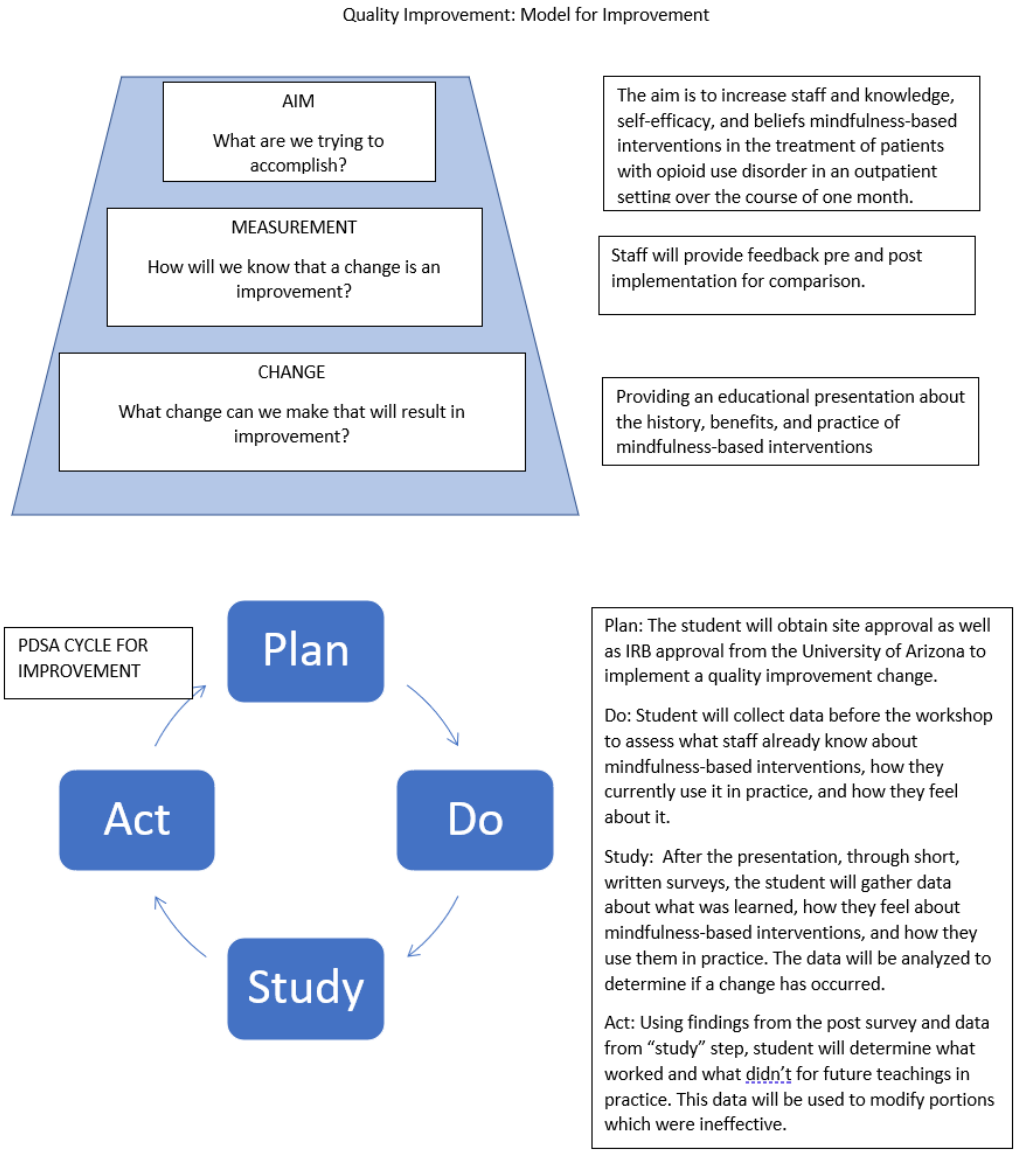
the participants in a mindfulness-based practice to solidify the understanding of learned material. This practice referred to as “The Raisin Meditation,” entailed the participants taking five minutes to turn their focus to a raisin (or similar snack food). Participants were be asked to hold the raisin in their hands or fingers, look at and observe aspects of the raisin, feel the texture, smell the raisin, and finally, taste and swallow the raisin. This exercise allowed participants to focus their attention on their senses without regard to past or future events.

Approximately one month following the presentation and mindfulness exercise, the student followed up with participants via email and had them complete a post-intervention short survey (Appendix D) to assess their learning and utilization of learned materials in practice. The student then *studied* the responses of participants to determine if a change or improvement had occurred. Such improvements noted were improved or decreased aggregate knowledge of mindfulness-based interventions (MBIs), improved ore decreased aggregate self-efficacy of MBIs, and improved or decreased aggregate beliefs about MBIs.

The last step of the PDSA cycle is to *act.* Using the data that had been studied, the student determined if any areas in the implementation process needed improvement or how they could be altered to provide better outcomes. The student used the data to guide in improvements for future interventions in practice.

Figure 2

Quality Improvement: Model for Improvement



Setting and Stakeholders

Marana Health Center (MHC) Healthcare main campus is located in Marana, Arizona. MHC Healthcare is a community health center that provides a wide variety of healthcare services (MHC Healthcare, 2020c). Incorporated in 1964, MHC Healthcare now operates 16 locations

throughout the Marana and Tucson areas, employs over 500 staff, and serves over 50,000 patients (MHC Healthcare, 2020b). The mission of MHC Healthcare is to provide compassionate, quality, and accessible whole-person health care to its community, and their vision is to always put care first for patients and staff (MHC Healthcare, 2020a). The MHC Healthcare main campus includes an integrated care department that combines primary care and behavioral health services. This location also offers dentistry, internal medicine, outreach services, pediatrics, pharmacy, urgent care, WIC, and women's health. The main campus is also home to the Copper Café, a restaurant that serves as the training site for MHC's work adjustment program. Located near the main campus, the MHC Counseling and Wellness Center (CWC) offers a range of behavioral health services, including therapy, case management, employment services, medication management, housing assistance, and several support groups. For the purposes of this quality improvement project, the main campus and CWC were utilized. The student obtained site approval from the chief of clinical behavioral health to give permission to complete the QI project with their providers and staff (Appendix A).

For this QI project, the primary stakeholders were identified as the MHC administrators, providers, and staff of the MAT program. Such individuals include the chief of clinical behavioral health, lead provider of MAT services, and medical director of behavioral health. To proceed with stakeholder buy-in, the student enlisted the help of preceptors, one of which is the lead provider of MAT services and licensed in addiction medicine, to help engage the stakeholders in promoting in the presentation to providers and staff.

Additional stakeholders in this QI project were patients who were ultimately expected beneficiaries of the positive outcomes resulting from practical implementation. More precisely,

patients enrolled in the site's medication-assisted treatment program for substance addiction were the primary patients affected in this quality improvement project.

Planning the Intervention

An educational PowerPoint was prepared to include topics relating to the history, benefits, and practice of mindfulness-based interventions. The PowerPoint was narrated and included a link to a mindfulness-based exercise for participants to complete. The PowerPoint was developed using evidence-based literature and reliable sources, including The American Psychiatric Association, The National Council for Behavioral Health, and the National Institute on Drug Abuse (Appendix E).

Participants and Recruitment

Based upon recommendations from the author of a previous QI project at this site and with similar interests (Stensrud, 2020), the participants in the current QI project were providers and staff members having direct contact with patients in medication-assisted treatment. These identified providers and staff members were primary care providers, behavioral health recovery coaches, registered nurses, and medical assistants.

The inclusion criteria for participation in this project were that the providers and staff members were assigned roles previously listed, employed at MHC’s main campus or its adjoining CWC, and had direct patient contact with participants in MHC’s medication-assisted treatment program. Exclusion criteria were providers that participated in the previous quality improvement project by Stensrud (2020) and providers and staff not having direct contact with MAT patients.

Recruitment of participants was done via email invitations sent by the executive administrative assistant to the chief of clinical behavioral health and medical director of behavioral health. Included in the recruitment email was a disclosure document (Appendix B), an informational flyer (Appendix C), briefly describing the presentation (Appendix E), and a link to complete the initial survey (Appendix D). The maximum number of potential participants was 69 and will consisted of the following: primary care providers (15), behavioral health registered nurses (2), primary care registered nurses (4), behavioral health recovery coaches (28), behavioral health medical assistants (5), and primary care medical assistants (15).

Consent and Ethical Considerations

For this QI project, participation was entirely voluntary. Participants were made aware of the purpose of the project via a written voluntary disclosure form (Appendix B). The Institutional Review Board (IRB) reviewed the student's project. It was determined that this project was not research, and Human Subjects Review was not required (Appendix A). To protect participant confidentiality, any information obtained during the process of this QI project was de-identified using Qualtrics, a cloud-based platform for creating online surveys to collect and analyze participant responses (The University of Arizona, 2020), which displayed responses, not contact information. To maintain confidentiality, all survey responses were available only to the student through a password-protected database (Qualtrics) and stored on a password-protected device that remained in a locked room, only accessible to the student. Upon completion of the project, the survey data was deleted from the device. The link to the survey and responses were then terminated from the database.

During the course of the intervention, the student performed ethically and responsibly relative to participants through the core principles of research ethics: beneficence, justice, and respect. *Beneficence*, or acting in a way that is intended to benefit others while promoting welfare and safety (Barrow, 2020), was observed as the providers and staff were expected to benefit from the learnings provided in the workshop. By providing evidence-based studies in support of the benefits of MBIs, participants were assured that its personal use or use in practice was designed to improve the quality of life. The student obtained Internal Review Board (IRB) approval for the QI project prior to initiating any data to ensure that the project was ethically sound and designed to benefit participants.

Participants were treated with *justice* or in a manner that is fair and gives participants the right to privacy (Barrow, 2020) throughout the implementation process. They were given the right to participate as well as the option to decline or withdraw participation during any point of the intervention. Participation remained entirely voluntary, with those declining to participate being treated fairly and without prejudice.

All participants were treated with *respect,* or human dignity, in this quality improvement project. The student maintained a high level of respect with participants in all interactions, including electronically and in person. This included protecting participant confidentiality, ensuring full disclosure, and promoting participants' autonomous decision-making (Barrow, 2020). The student accomplished this by accepting all participation decisions without bias, providing a disclosure document prior to participation, and de-identifying private information as applicable.

Data Collection

To gather baseline data, the student emailed, by proxy, an electronic 5-point Likert survey consisting of questions designed to obtain information about the provider and staff's current knowledge, self-efficacy, and beliefs about MBIs (Appendix D). To determine provider and staff knowledge, the survey included the following question: How would you assess your knowledge of mindfulness-based interventions? Options for this question will range from “I am an expert” to “I don’t know what MBIs are.” This question produced nominal level data. In determining levels of self-efficacy, the following question was asked: How confident are you in practicing mindfulness-based interventions? Responses available ranged from “very confident” to “not at all confident” and produced nominal level data. Finally, to determine beliefs about MBIs, the following question was included: Choose the option that best describes your attitude about mindfulness-based interventions. Optional responses ranged from “they are very beneficial” to “they are not beneficial” or “N/A (I don’t know what MBIs are).” This question also produced data that is nominal level. The initial survey also included a demographic questionnaire, including questions about the participant’s role, gender, and age, which produced nominal level data. The initial survey was delivered to participants in the form of a link to Qualtrics along with the invitation to participate and disclosure document (Appendix B & C). The pre-survey survey was distributed to participants on September 3, 2020, and remained open until September 17, 2020.

Because there was a lack of participation at the midpoint, one week after the initial survey was distributed and only one survey had been completed, the author requested that the administrative assistant send a reminder email to potential participants to encourage participation

prior to the cutoff date. This email was sent to participants on September 10, 2020. This prompted additional participation and resulted in three additional survey participants. This reminder email was incongruent with the method initially proposed for this QI project but deemed necessary by this author to ensure adequate participation.

After completing the initial survey, participants were directed to view the recorded presentation (Appendix E). After viewing the presentation, participants were asked to use the newly attained knowledge in their personal lives or share learned information with their patients as they saw fit. The post-intervention survey was electronically delivered to all providers and staff members by email from the executive administrative assistant to the chief of clinical behavioral health and medical director in the form of a Qualtrics link on October 1, 2020. It remained open until October 8, 2020, again utilizing the 5-point Likert scale as well as narrative responses, and was aim at assessing the effectiveness of the presentation and materials.

Data Analysis

All survey materials were collected through Qualtrics. Graphical representations were created in PowerPoint to show a comparison of pre- and post-intervention data, and a bar graph created in word to show demographic data. Quantitative content analysis was used in this project to summarize the results. A bar graph was used to display quantitative data, such as the frequency of MBI. Narrative or open-ended questions from the post-survey were used to gather information about the quality of the presentation and recommendations for improvement.

RESULTS

Outcomes

Demographic information is displayed in the table below. A total of four people participated in the pre-survey (N = 4). Of the four participants, four (100%) were female, none (0%) were male, and none (0%) identified their gender as "other." Of the four participants, three (75%) were medical assistants (MA), one was a primary care provider (PCP) (25%), none (0%) were recovery coaches, and none (0%) were nurses. Two (50%) of the participants were between the ages of 18 and 35, two (50%) were between the ages of 35 and 45, none (0%) were between the ages of 46 and 55, none (0%) were between the ages of 56 and 65, and none (0%) reported that they were over the age of 66.

Table 1

Demographics

Gender	Female		Male		Other
	100% (N=4)		0% (N=0)		0% (N=0)
Age	18-35	36-45	45-55	56-65	66+
	50% (N=2)	50%(N=2)	0%(N=0)	0%(N=0)	0% (N=0)
Role	PCP	BH-RC	BH-RN	BH-MA	Primary Care-MA
	25% (N=1)	0%(N=0)	0% (N=0)	25%(N=1)	50%(N=2)

When asked "How would you assess your knowledge of mindfulness-based interventions?" no participants (0%) said "I am an expert on mindfulness-based interventions," one (25%) said "I have some knowledge about mindfulness-based interventions," three (75%) responded "I have very little knowledge about mindfulness-based interventions," and none (0%) said, "I don't know what mindfulness-based interventions are." Relative to confidence about practicing mindfulness-based interventions, participants were asked, "How confident are you in practicing mindfulness-based interventions?" One participant (25%) said, "Not at all confident,"

two participants (50%) said “Minimally confident,” one (25%) said they were somewhat confident, and none (0%) said they were “Very confident.” When asked “Choose the option that best describes your attitude about mindfulness-based interventions,” two participants (50%) said “They are very beneficial,” none (0%), said “They provide some benefit,” none (0%) said “They provide minimal benefit,” and two (50%) said “N/A (I don’t know what mindfulness-based interventions are).” Participants were asked, “How often do you meditate or practice mindfulness?”. No participants (0%) said “Daily,” no participants (0%) said “A few times per week,” no participants (0%) said “A few times per month,” three participants (75%) said “Rarely,” and one participant (25%) said “Never.” Lastly, participants were asked “How often do you use or recommend mindfulness-based interventions in practice with patients?” No participants (0%) responded “Daily,” one participant (25%) responded “A few times per week,” no participants(0%) responded “A few times per month,” one participant (25%) responded “Rarely,” and two participants (50%) responded “Never.”

For the post-survey, there were three participants. No demographic information was collected for the post-surveys. For the first question, participants were again asked about their current knowledge of mindfulness-based interventions with the following question: “How would you assess your knowledge of mindfulness-based interventions?” No participants (0%) said, “I am an expert on mindfulness-based interventions,” one participant (33.33%) responded “I have some knowledge about mindfulness-based interventions,” no participants (0%) said “I have very little knowledge about mindfulness-based interventions, and two participants (66.67%) said “I don’t know what mindfulness-based interventions are.” When asked, “How confident are you in practicing mindfulness-based interventions?” no participants (0%) said “Very confident,” no

participants (0%) said “Somewhat confident,” one participant (33.33%) said “Minimally confident,” and two participants (66.67%) reported “Not at all confident.” Participants were asked, “Choose the option that best describes your attitude about mindfulness-based interventions.” No participants (0%) said “They are beneficial,” No participants (0%) said “They provide some benefit,” one participant (33.33%) said “They provide minimal benefit,” and two participants (66.67%) said “N/A (I don’t not know what mindfulness-based interventions are).” When asked, “How often do you meditate or practice mindfulness?” No participants (0%) said “Daily,” no participants (0%) said “A few times per week,” two participants (66.67%) said “A few times per month,” no participants (0%) said “Rarely,” and one participant (33.33%) said “Never.” Finally, participants were asked, “How often do you use or recommend mindfulness-based interventions in practice with patients?” No participants (0%) said, “Daily,” no participants (0%) said “A few times per week, two participants (66.67%) said, “A few times per month” and one (33.33%) said “Never.”

Figure 3

Knowledge of MBIs

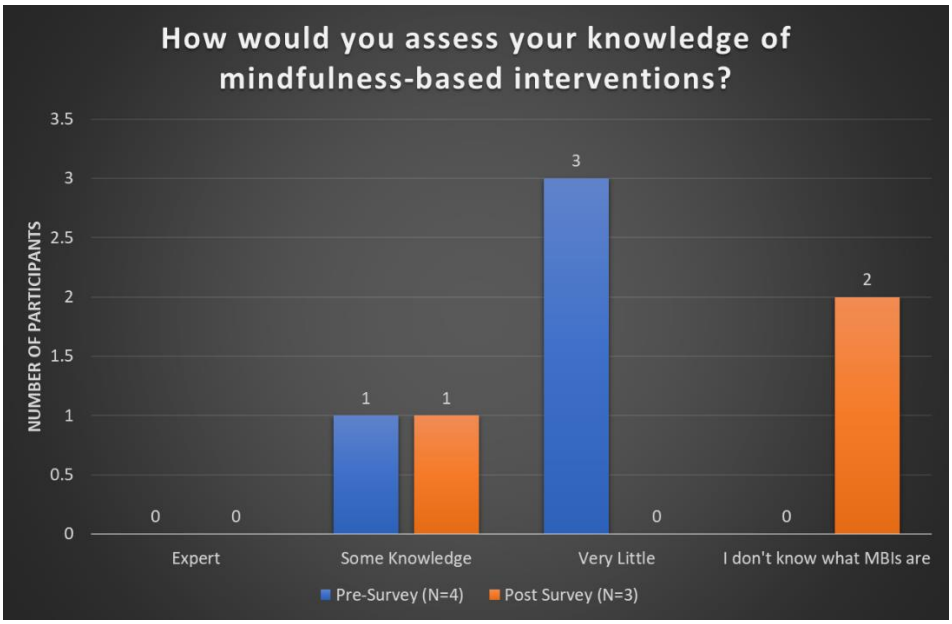


Figure 4

Confidence in Practicing MBIs

Figure 5

Attitudes about MBIs

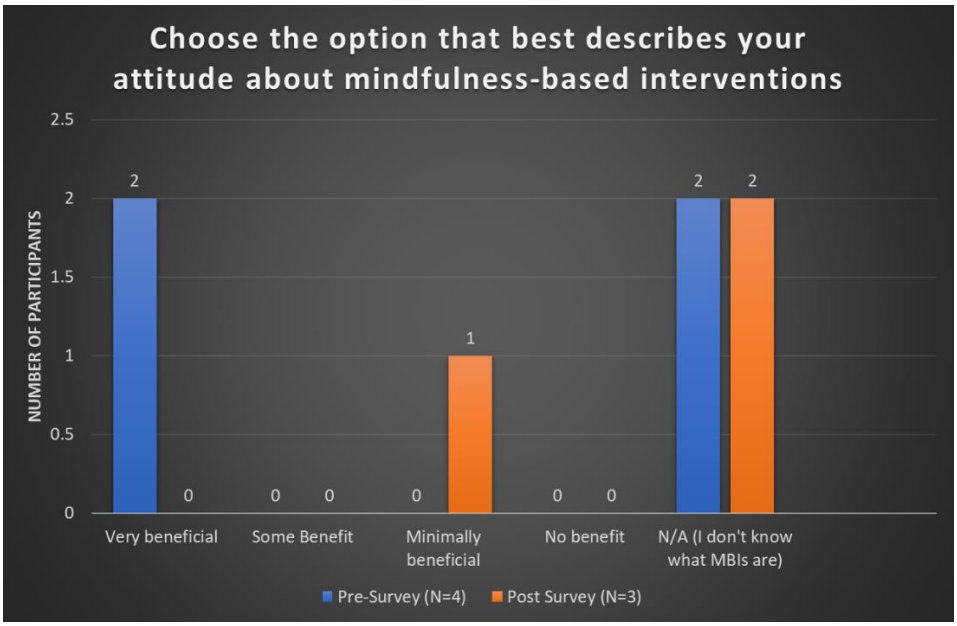


Figure 6

Personal Practice of MBIs

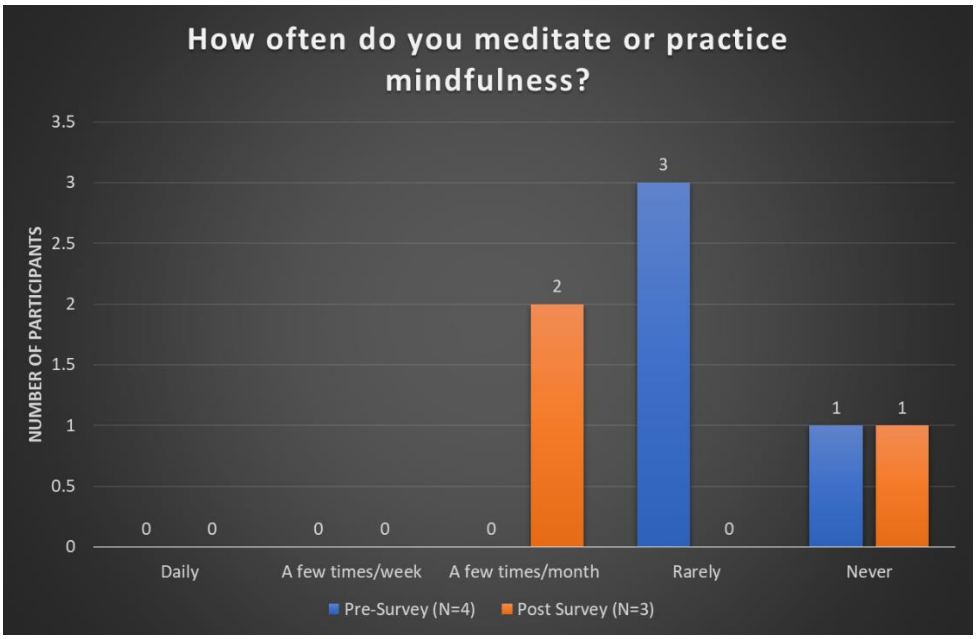
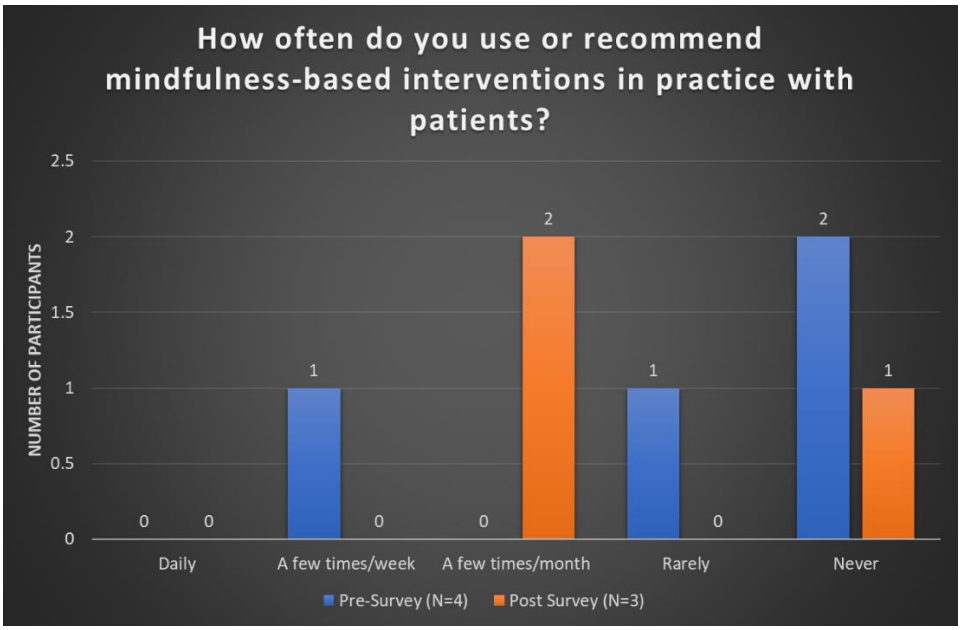


Figure 7

Professional Use and Recommendation of MBIs



Lastly, participants were given the opportunity to provide free-text answers about the presentation itself. The first question asked participants, “What did you like MOST about the mindfulness-based intervention presentation?” There were two responses: “I didn’t like the trainer, so it was difficult to focus” and “I did not get to view this myself, working from home.” The next question asked was, “What did you like LEAST about the mindfulness-based intervention presentation?” There were two responses: “Same as above” (referring to the response about disliking the trainer) and “Did not view it, unsure when this was done.” The last question asked was, “What recommendations would you make to improve the presentation?” There were two responses: “It be someone who doesn’t treat the participants like children” and “I would need to view it to say.”

DISCUSSION

Summary

Many people, including healthcare providers, are unaware of the benefits of mindfulness-based interventions and how they can be used to improve quality of life. As an adjunct to treatment for patients being treated for substance use, mindfulness-based interventions can improve overall well-being. However, many providers do not promote the use of MBIs in practice. One reason for this could be that they are not confident in their current knowledge or have negative attitudes or beliefs about MBIs.

Although the research suggests that MBIs are useful in a variety of platforms and for various diagnoses, they are not widely utilized or promoted in everyday practice. The variation among knowledge, attitudes, and beliefs about MBIs among healthcare providers poses a barrier to implementing these interventions effectively into practice. This QI project, following a quantitative descriptive study design, sought to improve the knowledge, self-efficacy, and beliefs about MBIs among healthcare providers and use of MBI.

Although there were a limited number of respondents, partially attributed to some staff members transitioning to working remotely and having limited access to email, the key findings showed that initial overall knowledge, confidence in practicing MBIs, personal MBI use, and professional MBI use were limited. These findings were the same for all age groups who participated. Of note, the participant that reported their role as a primary care provider (PCP) reported higher-level responses compared to those identified as medical assistants (MAs) in some areas including knowledge, confidence, attitude, and using or recommending MBIs in practice with patients. Upon completion of the intervention, aggregate key findings were that

knowledge of MBIs were minimal, confidence in practicing remained minimal, and personal and professional MBI use was reported to be a few times per month, increased from pre-intervention reports of rarely or never. The findings were inconclusive for those identified in the roles of nurses and recovery coaches and outside of female gender due to a limited response rate.

Interpretation

The findings from the intervention suggest that the participants may have found some benefit in the educational material, enough to make improvements in how often they practice or promote MBIs in their personal or professional lives. However, there were no noticeable improvements in knowledge of, confidence, or attitudes about MBIs, which may be indicative of a need for improvement in the content of the presentation. Furthermore, it could be interpreted that attitudes about MBIs had worsened. This could be attributed to the possibility that participants from the pre-survey and post-survey differed as indicated by responses of not viewing the presentation and not knowing at all what MBIs are. It may also be attributed to participants' dislike for the presenter as indicated by free-text responses, which suggest that they could benefit from an in-person presentation or, perhaps, a higher-level presentation.

In the study by Kassa, Human, and Gemeda (2018), it was suggested that, in general, practitioners would not practice what they do not know, and their likelihood of promoting interventions are based on their current knowledge of the evidence-based intervention. As such, it would be advisable that the intervention be more in-depth to broaden the provider's knowledge about MBIs. This would likely increase their confidence and attitudes about MBIs as well.

An anticipated aspect during this intervention was that there would be limited or possibly negative feedback due to the minimal interaction of the author with the participants as the

intervention took place entirely remotely. Due to this, there was a lack of rapport building or face to face engagement, and some negative feedback was received.

Implications

Implications for Practice

Relative to the practice of nursing, advocacy, and education for patients in medication-assisted treatment programs about mindfulness-based interventions is an essential step in overall health promotion. Advocating for the inclusion of MBIs in MAT programs and educating other staff members about the benefits of MBIs can improve knowledge, beliefs, and attitudes of providers to encourage the use of MBIs in practice. Educating patients and one another about the many benefits associated with MBIs would increase the likelihood of these interventions being utilized daily.

Specific to Marana Healthcare's main campus and CWC sites, the education of staff inclusive of providers, MAs, nurses, and recovery coaches working with MAT patients relative to MBIs would be beneficial in improving quality of life for staff as well as patients. Some suggested interventions would be simple web-based training or emailed mindfulness flyers for all staff to remind them of the benefits of MBIs. Additionally, primary care providers, recovery coaches, and nurses should be encouraged to promote MBIs. It may be beneficial for the clinic to display reminders about mindfulness or have materials readily available for patients that may inquire about it.

Implications for Education

This QI project found that there is an educational gap, which necessitates further intervention to benefit the clinical sites overall. With more educational intervention about the

benefits of MBIs, the staff and providers would be better equipped to teach and practice MBIs to improve healthcare. Based on initial survey responses, it was evident that there is minimal education relating to MBIs for the roles identified by participants (primarily medical assistants). The findings would suggest a necessity in changes to curriculum for individuals in this role. A suggestion for policy changes would be to implement continuing education materials related to MBIs.

Implications for Research

While completing this QI project, it was evident that there were areas that could use refinement during the process. To build rapport and make the presentation more interactive, an in-person format may have been more beneficial. The use of technology and the extended gap between the pre and post surveys left room for confusion in data, which may suggest that an immediate post-survey could have yielded more informative data. Acquiring data from a wider variety of roles and genders would also be beneficial in this area of study to gain a clearer understanding of any further gaps in education as they relate to specific populations. Lastly, acquiring demographic data in the post-survey, as well as the pre-survey, would have been beneficial for comparative purposes.

Implications for Policy

Relative to policy, there are no implications for change indicated for MBIs. However, it is recommended that nurses at all levels advocate for the inclusion of MBIs as they are of great benefit to patients.

Limitations

There were limitations in this QI project, which may have impacted the findings. The sample was limited to two clinical sites were located in a rural setting making the findings non-generalizable. The recruitment strategy was only through email and based on staff members identified by their role within the clinic. The number of participants was small for both the pre- and post-surveys. The author attempted to mitigate this by initiating a reminder email to promote participation for the pre-survey. Lastly, there were no responses from any male participants, recovery coaches, or nurses during the intervention.

This QI project was implemented during a pandemic, COVID-19, which potentially affected recruitment and participation. Initially, implementation of the project was to be in person at the clinic site. Clinical policies limited in-person contact with staff, and a large percentage of the staff opted to complete their employment duties remotely, away from the clinic sites, which limited their access to email, the primary delivery method for the intervention.

DNP Essentials Addressed

This author addressed several DNP essentials throughout this project. *DNP Essential III - Clinical Scholarship and Analytical Methods for Evidence-Based Practice*: Evidence-based practice was used to guide much of the project. Based on the literature synthesized and the work of Nola Pender's health promotion model (HPM) (Murdaugh, Parsons, & Pender, 2019; Pender, Murdaugh & Parsons, 2011), this author used evidence-based practice to implement a quality improvement (QI) project within a clinical setting. This author developed a presentation using material extrapolated from the literature and surveys following the steps of the HPM as these materials were all determined useful in previous practice.

DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care: Information systems and technology were used in the development of this quality improvement project for the transformation of healthcare. As previously mentioned, the entire intervention took place remotely. All communication with the clinic site was done through email, and all presentations, surveys, and data collection were done electronically.

Conclusions

This QI project indicates that a small intervention about the benefits of MBIs can yield improvements in the amount that people practice them in their personal or professional lives. While the aggregate findings do not portray a clear-cut overall improvement or decline across all outcomes, some improvements were noted in how participants used MBIs in their personal or professional practice. This implies that, to some extent, improvements can be accomplished in the provider knowledge, confidence, and attitudes about MBIs if they are equipped with sufficient information as well as having the information delivered in a way that they find beneficial.

The results of this QI project show that there may be an educational gap about MBIs among healthcare providers that warrants attention. Based on the feedback provided by some participants, it can be gathered that such education can be provided on a variety of levels catered to particular roles within the clinical setting for optimal results. Additionally, participants may have a preference for the educational format or presenter, which would optimize their learning. Addressing the gap in knowledge about MBIs among healthcare providers will serve as a step

towards improving overall quality of life for patients in medication-assisted treatment as well as all patients in general.

Plan for Sustainability

Moving forward, this author would recommend that the site continue to encourage the use of mindfulness-based interventions for use with patients in medication-assisted treatment. Furthermore, it would be recommended that providers, recovery coaches, MAs, and nurses obtain continuing education (CE) in mindfulness-based interventions.

Plan for Dissemination

Findings from this quality improvement project will be disseminated to the chief of clinical behavioral health via an emailed letter inclusive of the aggregate results and recommendations for sustainability. Additionally, the findings will be presented orally to the project committee, which is inclusive of a staff member of Marana Healthcare's main campus.

APPENDIX A:

MHC HEALTHCARE SITE APPROVAL/THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD LETTER

MHC Healthcare
Quality healthcare with a heart!

July 14, 2020

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

Please note that Mrs. Paulina Zapata, UA Doctor of Nursing Practice student in the Psychiatric Mental Health Nurse Practitioner program has permission of MHC Healthcare to conduct a quality improvement project at our facility for her project, "Mindfulness-Based Education for Clinical Staff with Medication Assisted Treatment".

Mrs. Zapata will conduct pre and post surveys of health care providers, recovery coaches, nurses, and medical assistants at MHC Healthcare and provide an educational presentation on the benefits, history, and use of mindfulness-based interventions. She will recruit participants through email. The email will provide a description of the project, what they will be asked to do, the time involved, and a link to the online surveys. Mrs. Zapata's activities will be completed by *December 31, 2020.*

Mrs. Zapata has agreed to provide my office a copy of the University of Arizona Determination before she recruits participants. She will also present aggregate results to the staff by email communication.

If there are any questions, please contact my office.

Signed,

Jon Reardon, MBA, MSW, LCSW
Chief of Clinical Behavioral health
MHC Healthcare

Behavioral Health Services
13395 N. Marana Main Street, Bldg B | Marana, AZ 85653

www.mhchealthcare.org

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

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

Date:	September 01, 2020
Principal Investigator:	Paulina Alicia Zapata
Protocol Number:	2008002862
Protocol Title:	Mindfulness-Based Education for Clinical Staff Providing Services to Medication-Assisted Treatment Patients
Determination:	Human Subjects Review not Required

Documents Reviewed Concurrently:

HSPP Forms/Correspondence: *Zapata_IRB Determination of Human Research Form_8.26.20.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 B:

CONSENT DOCUMENT (DISCLOSURE FORM/CONSENT FORM)

Mindfulness-Based Education for Staff Providing Services to Medication-Assisted Treatment Patients

Paulina Zapata, BSN, RN, DNP-PMHNP Candidate

The purpose of this project is to improve staff knowledge, self-efficacy, and beliefs about mindfulness-based interventions, which can be used to improve outcomes for patients in medication-assisted treatment programs.

If you choose to take part in this project, you will be asked to complete a pre-survey, watch an educational PowerPoint presentation, and complete a post-survey approximately 30 days after viewing the presentation. It will take approximately 2 minutes to complete each survey and 10-15 minutes to view the presentation. There are no foreseeable risks associated with participating in this project, and you will receive no immediate benefit from your participation. Survey responses are anonymous.

If you choose to participate in the project, participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw at any time from the project. In addition, you may skip any question that you choose not to answer. By participating, you do not give up any personal legal rights you may have as a participant in this project.

For questions, concerns, or complaints about the project, you may contact Paulina Zapata, BSN, RN, DNP-PMHNP candidate by phone at (520)431-0388 or by email at aripaulina@email.arizona.edu

APPENDIX C:

RECRUITMENT MATERIAL (RECRUITMENT EMAILS)

THE UNIVERSITY OF ARIZONA.

Paulina Alicia Zapata <aripaulina@email.arizona.edu>

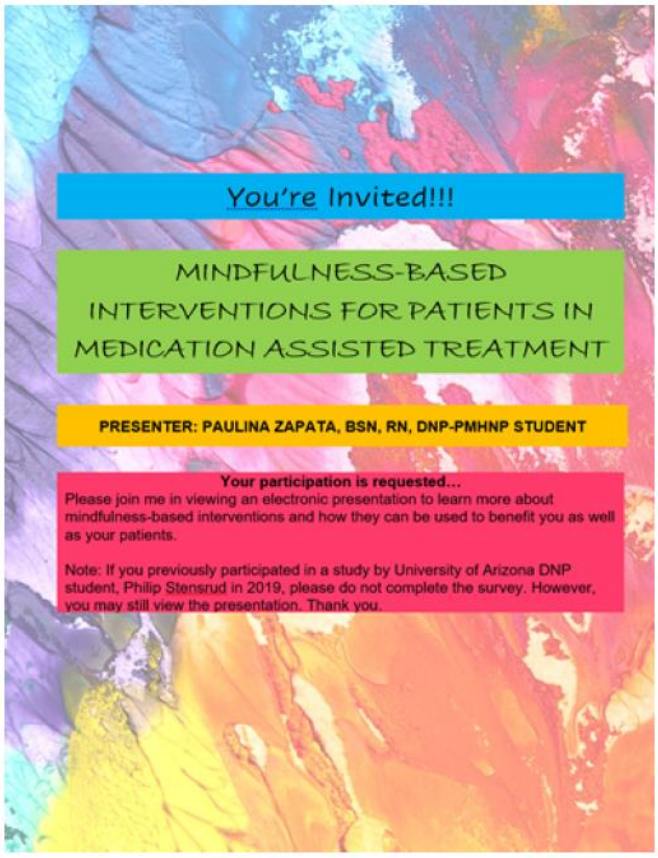
DNP Project Pre-Survey

Paulina Alicia Zapata <aripaulina@email.arizona.edu> Wed, Sep 2, 2020 at 10:09 AM
To: rhoffman@mhchealthcare.org
Cc: Jon Reardon <jreardon@mhchealthcare.org>

Hello Renee,
Here are the components of my DNP project initial survey. Please distribute electronically to staff members at the MHC Main Clinic and the Counseling and Wellness Center in the identified roles:

- Primary Care Providers
- Primary Care Nurses
- Primary Care Medical Assistants
- Behavioral Health Recovery Coaches
- Behavioral Health Nurses
- Behavioral Health Medical Assistants

**Please let me know when you have distributed the information so I can keep a record of the timeline. Thank you!



Mindfulness-Based Education for Staff Providing Services to Medication-Assisted Treatment Patients
Paulina Zapata, BSN, RN, DNP-PMHNP Candidate

The purpose of this project is to improve staff knowledge, self-efficacy, and beliefs about mindfulness-based interventions, which can be used to improve outcomes for patients in medication-assisted treatment programs.

If you choose to take part in this project, you will be asked to complete a pre-survey, watch an educational PowerPoint presentation, and complete a post-survey approximately 30 days after viewing the presentation. It will take approximately 2 minutes to complete each survey and 10-15 minutes to view the presentation. There are no foreseeable risks associated with participating in this project, and you will receive no immediate benefit from your participation. Survey responses are anonymous.

If you choose to participate in the project, participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw at any time from the project. In addition, you may skip any question that you choose not to answer. By participating, you do not give up any personal legal rights you may have as a participant in this project.

For questions, concerns, or complaints about the project, you may contact Paulina Zapata, BSN, R.N., DNP-PMHNP candidate by phone at (520)431-0388 or by email at aripaulina@email.arizona.edu.

Link to Pre Survey (Complete prior to viewing presentation):
https://uarizona.co1.qualtrics.com/jfe/form/SV_7WMP5GHIZTNUBtH

*Note: the link to the Pre survey will remain open for a period of two (2) weeks.

Click on the attachment below to view the presentation

--
Respectfully,
Paulina Zapata, BSN, RN
University of Arizona Doctoral Student - 2018 Cohort, PMHNP Specialty

PZ_DNP Powerpoint.pdf
447K

THE UNIVERSITY OF ARIZONA.

Paulina Alicia Zapata <aripaulina@email.arizona.edu>

DNP Project Post-Survey

Paulina Alicia Zapata <aripaulina@email.arizona.edu> Thu, Oct 1, 2020 at 8:25 AM
To: Renee Hoffman <rhoffman@mhchealthcare.org>
Cc: Jon Reardon <jreardon@mhchealthcare.org>

Hello Renee,

Here is my DNP project post survey. Please distribute electronically to staff members at the MHC Main Clinic and the Counseling and Wellness Center in the identified roles:

- Primary Care Providers
- Primary Care Nurses
- Primary Care Medical Assistants
- Behavioral Health Recovery Coaches
- Behavioral Health Nurses
- Behavioral Health Medical Assistants

Please complete the following survey if you viewed the mindfulness-based intervention presentation sent 30 days ago. Thank you for your participation.

Link to Post Survey:

https://uarizona.co1.qualtrics.com/jfe/form/SV_0ctwLVw5DBOmOS9

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Respectfully,
Paulina Zapata, BSN, RN
University of Arizona Doctoral Student - 2018 Cohort, PMHNP Specialty

APPENDIX D:

EVALUATION INSTRUMENTS (PRE-SURVEY AND POST-SURVEY)

Mindfulness Based Interventions in MAT Setting (Pre-Survey)

For each question, select the answer that best represents your age, role, and current knowledge, beliefs, and use of mindfulness-based interventions. You may select one (1) answer for each multiple-choice question.

Q1 Gender
Male
Female
Other _____

Q2 Age
18-35
36-45
46-55
56-65
66+

Q3 What is your role at MHC?
Primary Care Provider
Behavioral Health Recovery Coach
Behavioral Health Registered Nurse
Behavioral Health Medical Assistant
Other _____

Q4 How would you assess your knowledge of mindfulness-based interventions?
I am an expert on mindfulness-based interventions
I have some knowledge about mindfulness-based interventions
I have very little knowledge about mindfulness-based interventions
I don't know what mindfulness-based interventions are

Q5 How confident are you in practicing mindfulness-based interventions?
Very confident
Somewhat confident
Minimally confident
Not at all confident

Q6 Choose the option that best describes your attitude about mindfulness-based interventions
They are very beneficial
They provide some benefit
They provide minimal benefit
They are not beneficial
N/A (I don't know what mindfulness-based interventions are)

Q8 How often do you meditate or practice mindfulness?
Daily
A few times per week
A few times per month
Rarely
Never

Q9 How often do you use or recommend mindfulness-based interventions in practice with patients?
Daily
A few times per week
A few times per month
Rarely
Never

Mindfulness Based Interventions in MAT Setting (Post Survey)

For questions 1 - 5, please select the answer that best represents your current knowledge, beliefs, and use of mindfulness based interventions. You may select one (1) answer for each multiple choice question. Questions 6 - 8 are open-ended and you may type your responses.

Q1 How would you assess your knowledge of mindfulness-based interventions?
I am an expert on mindfulness-based interventions
I have some knowledge about mindfulness-based interventions
I have very little knowledge about mindfulness-based interventions
I don't know what mindfulness-based interventions are

Q2 How confident are you in practicing mindfulness-based interventions?
Very confident
Somewhat confident
Minimally confident
Not at all confident

Q3 Choose the option that best describes your attitude about mindfulness-based interventions
They are very beneficial
They provide some benefit
They provide minimal benefit
They are not beneficial
N/A (I don't know what mindfulness-based interventions are)

Q4 How often do you meditate or practice mindfulness?
Daily
A few times per week
A few times per month

Rarely
Never

Q5 How often do you use or recommend mindfulness-based interventions in practice with patients?
Daily
A few times per week
A few times per month
Rarely
Never

Q6 What did you like MOST about the mindfulness-based intervention presentation?
_____

Q7 What did you like LEAST about the mindfulness-based intervention presentation?
_____

Q8 What recommendations would you make to improve the presentation?
_____

APPENDIX E:

PARTICIPANT MATERIAL (POWERPOINT PRESENTATION)

Slide 1

Mindfulness-Based Interventions

Paulina Zapata, BSN, RN,
DNP-PMHNP Candidate

THE UNIVERSITY OF ARIZONA
College of Nursing

Slide 2

OBJECTIVES

PRESENTATION GOALS

- Discuss opioid epidemic
- Define Opioid Use Disorder and Substance Use Disorder
- Common treatment modalities
- Mindfulness Based Interventions (MBIs): Description and history
- Types of MBIs
- Effectiveness in mental health
- Benefits to patients
- Demonstration
- Additional Resources

Slide 3

OPIOID EPIDEMIC

- Since 2013, opioid-involved deaths have increased by 76% in Arizona (National Institute on Drug Abuse, 2019)
- Arizona had 928 opioid-related deaths in 2017(National Institute on Drug Abuse, 2019)
- 22-fold increase in deaths involving fentanyl & other synthetic opioids from 2002 to 2017 in America (American Psychiatric Association, 2019)
- 1 in 12 adults are diagnosed with Substance Use Disorder in America (National Council for Behavioral Health, 2018)

Image Credit: https://www.aacom.org

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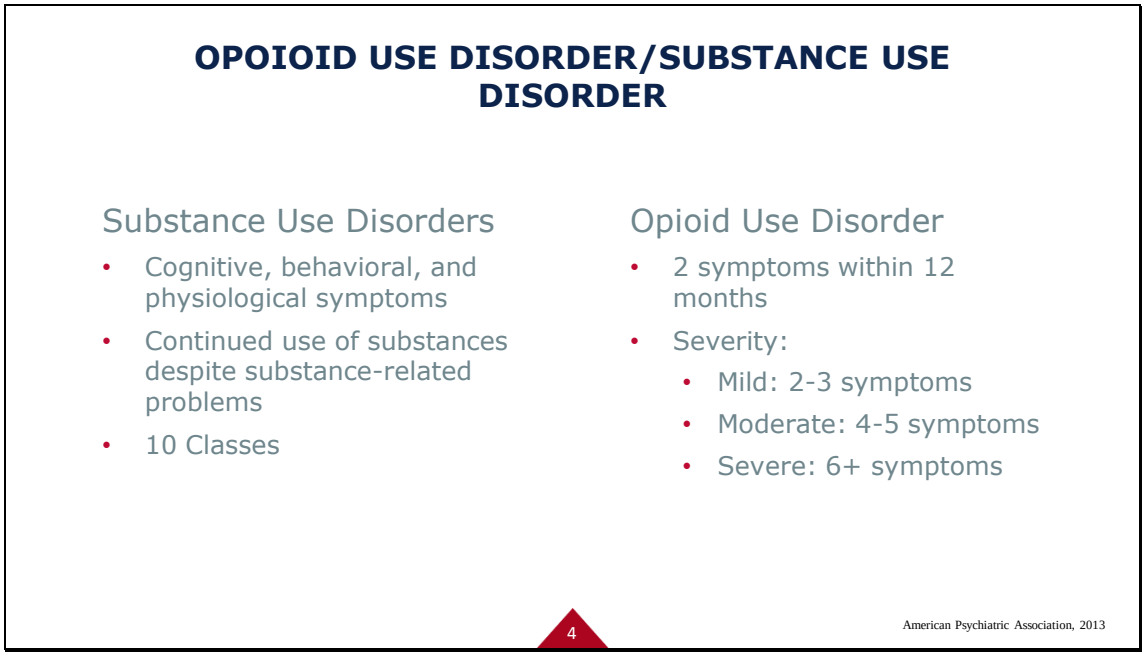
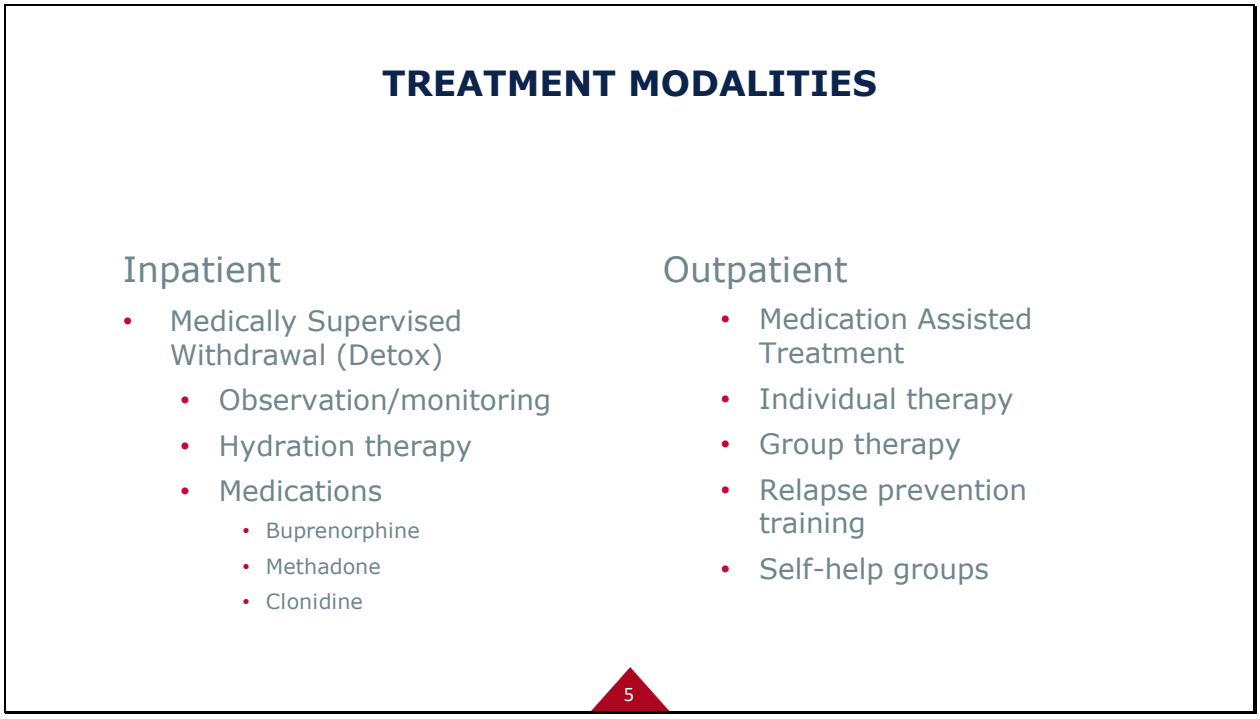
Slide 4



When speaking of substance use disorders in general, the DSM-5 defines it as cognitive, behavioral, and physiological symptoms indicating that the individual continues using substances despite significant substance-related problems. The broad term of substance use disorders is categorized into ten classes: Alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, stimulants, tobacco, and others.

When speaking specifically of opioid use disorder, or OUD, the DSM-5 defines this diagnosis as a patient exhibiting at least two problematic symptoms within a 12-month period. Some of these symptoms include: Taking more opioids than prescribed or for more extended periods than prescribed, having a persistent desire or urge to use opioids, using to the point that there is a failure to fulfill major obligations such as work, school, or parenting, spending significant amounts of time acquiring opioids, experiencing multiple unsuccessful efforts to cut down or stop taking opioids, continued use despite adverse social or legal consequences, continued use when it is physically hazardous, developing tolerance or having to use more to achieve the same effects, or experiencing physical withdrawal from opioids. The severity of the diagnosis is based on the number of symptoms present in a 12-month period where 2-3 symptoms are defined as mild, 4-5 symptoms are moderate, and six or more symptoms are severe.

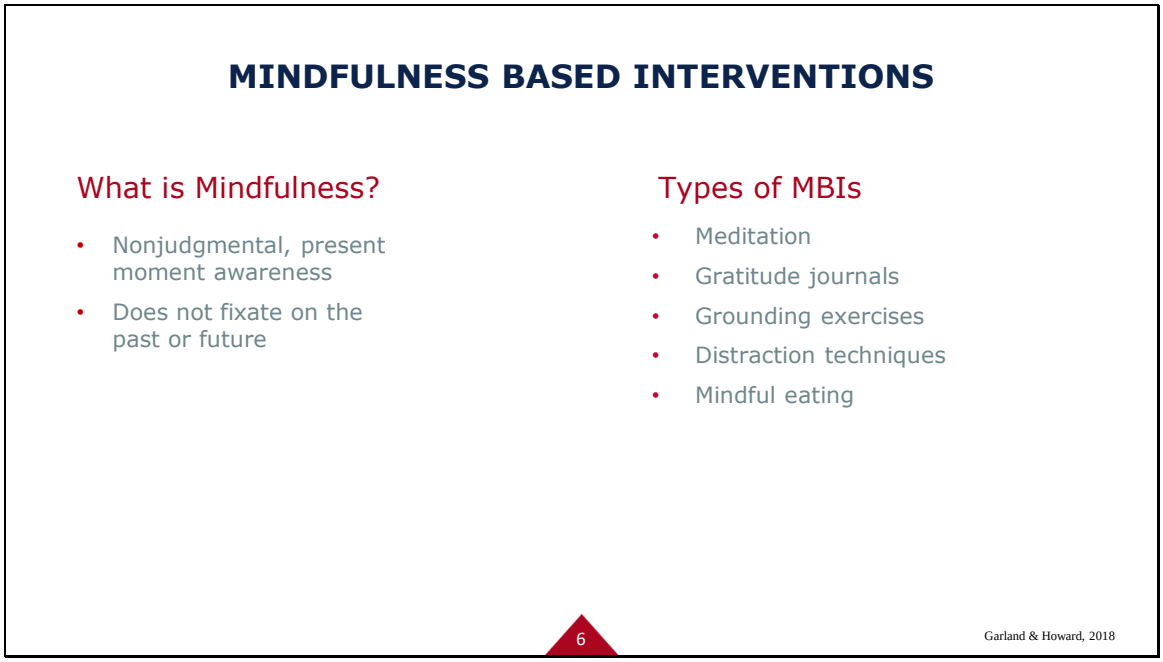
Slide 5



In an inpatient detox setting, otherwise referred to as medically supervised withdrawal, patients are carefully observed and monitored for symptoms of acute withdrawal. For mild symptoms of opioid withdrawal, patients can be given fluid replacement therapy to include vitamins and supplements. This is done for the purpose of replenishing fluids lost through sweating and diarrhea commonly experienced during withdrawal. Patients in mild withdrawal may also receive clonidine, which is a blood pressure medication that can provide relief from some of the physical withdrawal symptoms such as sweating, diarrhea, vomiting, cramps, chills, anxiety, insomnia, and tremor. For moderate to severe withdrawal symptoms, patients might be given buprenorphine, a partial agonist used to alleviate withdrawal symptoms and reduce cravings, or methadone, a full agonist typically used to reduce withdrawal symptoms and cravings in patients detoxing from longer acting opioids such as morphine or methadone itself.

Outpatient treatment can also include medication assisted treatment where patients go to a facility to obtain their maintenance medications such as buprenorphine or methadone. Their treatment may also include group or individual therapy, relapse prevention training where they are encouraged to develop skills related to employment, communication, anger and stress management, and goal-setting. Self-help groups such as narcotics anonymous are also available on an outpatient basis.

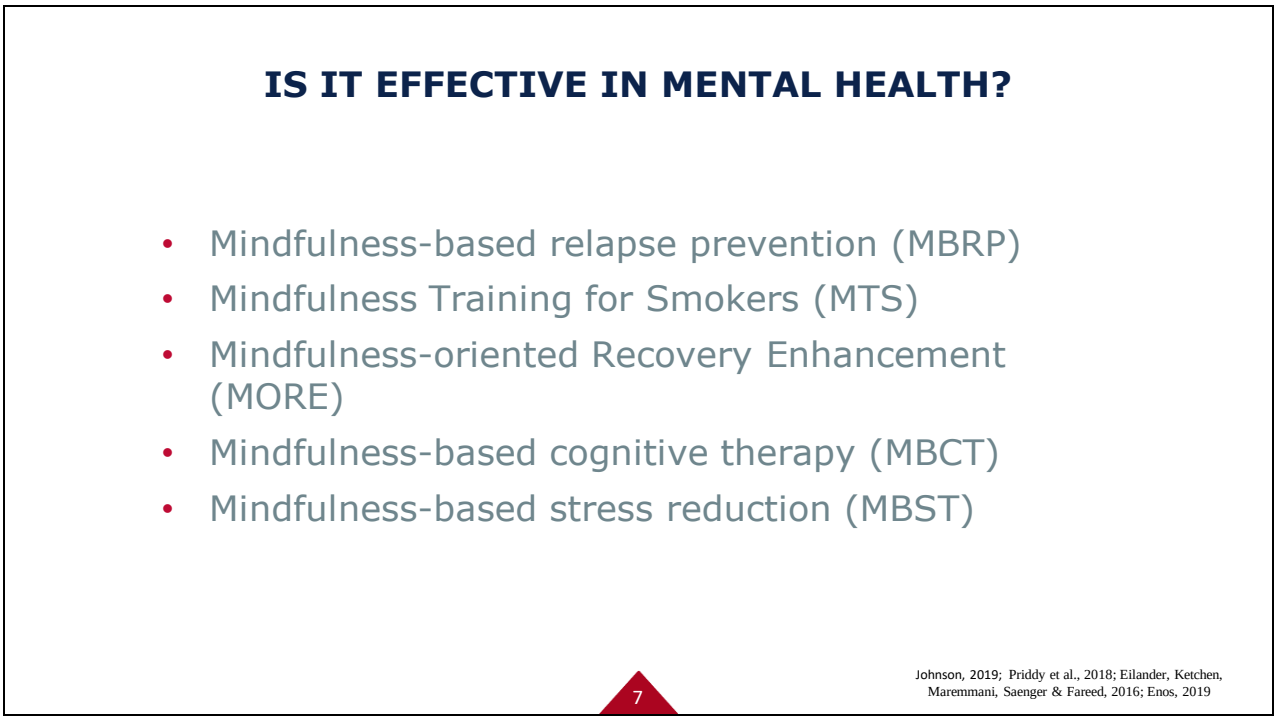
Slide 6



An alternate or adjunct intervention in relapse prevention is mindfulness-based interventions or MBIs. MBIs include practices designed to allow patients to enter a state of mindfulness by becoming aware of and attentive to the present moment in a nonjudgmental way and without thoughts of the past or future.

The most common form of mindfulness-based interventions is mindfulness meditation. There are several variations of mindfulness meditation, including focused breathing, yoga, tai chi, body scan, and sensory awareness. Other MBIs include gratitude journals, grounding, and distraction techniques, and mindful eating. All of the interventions are focused on the present moment.

Slide 7



There are several programs based on the use of mindfulness techniques that have shown to be useful in treating mental health concerns, including substance use:

•Mindfulness-based relapse prevention is a program developed specifically to address addictive behaviors, including cravings, negative thoughts and emotions, and substance abuse. It has shown to provide significant decreases in overall substance use.
•Mindfulness Training for Smokers uses techniques targeted at improving mood and emotion dysregulation, which results in a reduction of tobacco cravings.
•Mindfulness-oriented Recovery Enhancement, specifically designed for use in the treatment of addiction, has proven to be effective in reducing pain severity and emotional reactivity. Patients using this program have reported an increase in awareness of their cravings and an increased ability to regulate them.
•Mindfulness-based cognitive therapy, now known as mindfulness-based cognitive behavior therapy, is focused on treating depression and eating disorders and focuses on providing patients a strong sense of self-awareness to work towards weakening negative thoughts.
•Mindfulness-based stress reduction has shown to be effective in reducing the physical and mental symptoms of stress and anxiety.

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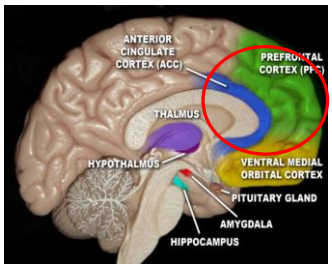
HOW CAN THIS BENEFIT MY PATIENTS?

- Reduces drug/alcohol cravings
- Relieves stress/anxiety
- Lowers blood pressure
- Improves sleep
- Reduces obsessive-compulsive behaviors

- Mindfulness meditation increases activity in the prefrontal cortex and anterior cingulate cortex



- ✓ Self-control
- ✓ Emotional regulation
- ✓ Stress reactivity
- ✓ Impulsivity

Image Credit: http://tmschattanooga.com

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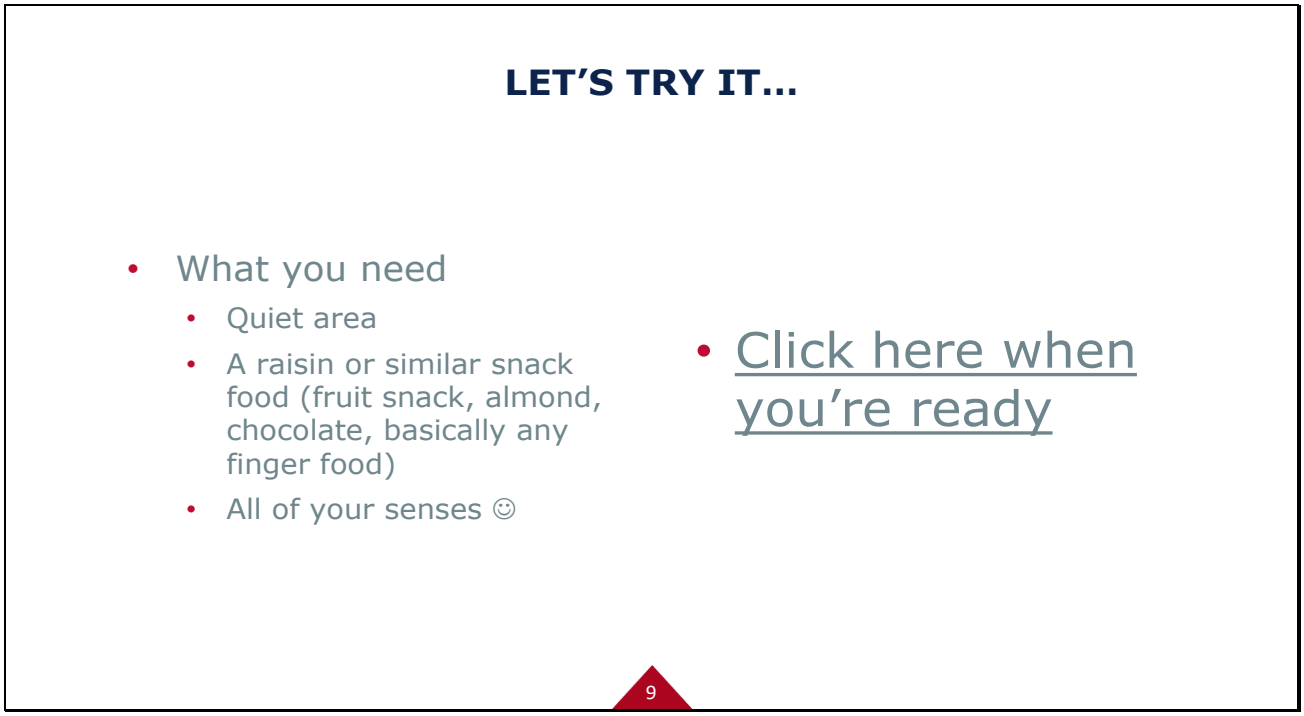
Tang, Tang, & Posner, 2016

Mindfulness-based interventions can benefit your patients in a variety of ways:
As previously discussed, the techniques can reduce drug and alcohol cravings, stress, and anxiety. By practicing mindfulness meditation and breathing techniques, patients can see decreases in blood pressure and OCD-type behaviors. The techniques also promote restful sleep. One study found that mindfulness meditation increases the activity in the prefrontal cortex and anterior cingulate cortex, areas of the brain that regulate self-control, emotions, stress reactivity, and impulsivity (all areas that patients being treated for addiction struggle with).

Slide 9



I'd like to demonstrate a simple mindfulness-based exercise. It focuses on mindful eating. So, to complete the exercise, you will need to be in a quiet area where you can focus your attention, a raisin, or similar snack food like a fruit snack or dried fruit. Basically, any finger food will do. The exercise will take approximately 3 minutes. When you are ready, click on the link to complete the exercise.

Slide 10

Mobile Apps:

- Headspace offers several meditations, including those for sleep, focus, stress, and anger management. There are a variety of exercises specially designed for children.
- Calm provides meditations and soothing sounds to encourage stress relief
- Meditopia has a lot of meditations and relaxing sounds as well. Many of the meditations are focus-based, allowing you to choose an area to work on, such as relationships, stress, confidence, and motivation.

Online Resources:

- Goodtherapy.org provides information on mindfulness-based interventions and has several links to guided exercises
- Positivepsychology.com compiles a list of useful mindfulness exercises, techniques, & activities for adults. It allows you to print PDFs of your choice of exercises (Raisin exercise), which can be shared with patients, friends, or family members.

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APPENDIX F:

PROJECT TIMELINE

Completion Date	Planning	Pre-Implementation	Implementation	Evaluation
5/22/20	Discuss implementation process with stakeholders/site staff			
5/25/20		Obtain implementation site approval letter		
6/20/20		Submit IRB application to Committee Chair		
8/4/20		Defend Proposal		
8/25/20		Obtain IRB approval		
9/2/20			Send out pre-survey (by email)	
9/2/20			Conduct educational presentation (by email)	
10/1/20			Send out post-survey (by email)	
10/12/20	Gather and organize responses from post/surveys			
10/13/20				Run data analysis testing if applicable
10/15/20				Summarize findings/results
11/9/20				Finalize Paper
11/9/20				Defend project

APPENDIX G:

LITERATURE REVIEW GRID

Pub. Year Author's Last Name	Title of Publication	Type of Study	Main Outcomes or Findings	Support for and or link to project
Alexander et al., 2019	Implementation of a Mindfulness Intervention for Women in Treatment for Opioid Use Disorder and Its Effects on Depression Symptoms	Quasi-experimental	• Women of childbearing age may not always choose MAT as a route for OUD/SUD • Pharmacological intervention is not always advised or sufficient in treating depression for patients with OUD/SUD • In the context of parenting, mindfulness can be an effective tool to teach coping strategies • Depression can directly affect a mothers' ability to maintain addiction recovery	• Results showed a decrease in depression symptoms from baseline after mindfulness intervention • Patients in this study utilized mindfulness to address/treat depression but had a diagnosis of OUD
Enos, G., 2019	Improving the impact of medication could require a dose of mindfulness	Literature review	• Mindfulness interventions in conjunction with treatment as usual for MAT patients improves patient outcomes • Mindfulness Oriented Recover Enhancement (MORE) therapy enhances MAT and reduces cravings	• MORE patients reported nearly 3 times as many cravings by nearly half of the intensity of opioid urges by the end of treatment • MORE teaches mindfulness and to be more *aware* of cravings, then to increase the capacity to *regulate* the craving • MORE is most useful in hard-to-treat patient populations
Gannon et al., 2017	Impact of Mindfulness-Based Parenting on Women in Treatment for Opioid Use Disorder	Observational	• Mothers with OUD are at an increased risk for maladaptive parenting • Mindfulness may contribute to better quality of parenting in OUD-diagnosed mothers	• Mindfulness-Based Parenting (MBP) interventions resulted in improvements in parenting behaviors • Mindfulness-Based interventions in patients with OUD promote QOL

Pub. Year Author's Last Name	Title of Publication	Type of Study	Main Outcomes or Findings	Support for and or link to project
Garland & Howard, 2018	Mindfulness-based treatment of addiction: current state of the field and envisioning the next wave of research	Meta-analysis	• Mindfulness-based interventions (MBI) are up and coming interventions in the treatment of addiction • MBI is expected to yield promising results in OUD patients as previous studies with small samples have shown positive outcomes • Opioid epidemic is necessitating the use of more innovative tactics for combating addiction	• Research on this topic is fairly new, however evidence available shows significant improvements in cravings with the use of MBI • Mindfulness is not a new practice in general, has been shown effective in the treatment of other diagnoses including depression • Various models are being utilized in patients with OUD/SUD including MORE and Mindfulness-Based Relapse Prevention (MBRP)
Goldberg et al., 2017	Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis	Meta-analysis	• Mindfulness meditation is suggested to be the core component of MBI • MBI is considered a treatment option for many psychiatric diagnoses • The inclusion of MBI versus treatment as usual is expected to produce greater QOL in patients with psychiatric disorders	• Mindfulness meditation was the core component for inclusion in the analysis • Randomized controlled trials were included in the analysis • Mindfulness based interventions were shown to be on average not different from first-line, evidence-based therapies such as CBT and antidepressant medications
Grow et al., 2015	Enactment of Home Practice Following Mindfulness-based Relapse Prevention and its Association with Substance-use Outcomes	Randomized controlled trial	• MBI are more effective when practiced in the home as well as the clinical setting • MBI requires ongoing treatment to maintain effectiveness in patients with addiction	• When utilized and implemented in clinical practice, MBI is effective in OUD and SUD patients, but home practice is highly encouraged

Pub. Year Author's Last Name	Title of Publication	Type of Study	Main Outcomes or Findings	Support for and or link to project
Jones et al., 2019	Perceptions about mindfulness-based interventions among individuals recovering from opioid and alcohol use disorders: Findings from focus groups	Focus group	• Successful implementation of MBI in practice is dependent on the perception of it by stakeholders (patients and providers) • Evidence has shown MBI to be effective in practice with OUD patients as a nonpharmacological treatment	• Stakeholders would need a clear understanding and background of the benefits of MBI to have a positive outlook on implementing it into practice • OUD patients fear a lack of empathy by a trainer without personal substance use history • Monetary stress related to cost of attending MBI treatments • Mindfulness apps • Group apps, virtual collaboration
Tang et al, 2016	Mindfulness meditation improves emotion regulation and reduces drug abuse	Randomized controlled trial	• Mindfulness meditation has positive effects on the ventral part of anterior cingulate cortex (ACC) and its adjacent medial prefrontal cortex (mPFC) in the brain. These areas are associated with emotional regulation • Negative emotional regulation is the main culprit in initiating poor behaviors including drug use and impulsivity	• Mindfulness training in treatment for addiction showed a reduction in craving and smoking following training, however, many studies lack randomization and weak controls • Mindfulness meditation induces increased connectivity and activity in ACC/mPFC regions and can promote emotion regulation and improving self-control.

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