Mindfulness and Meditation as an Effective Treatment for Opioid Dependence

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Assignment Description: The final paper is the culmination of the entire semester’s work, incorporating research projects into an ultimate research paper. The paper should have a controlling argument: an arguable claim that helps to provide an organizational structure to the paper. The assignment was completed for Dr. Stephen Neaderhiser’s College Writing II.

The act of meditating has been used for centuries and is a well-known component in many eastern religions. Buddhist teachings and practices use meditation as a way of creating clarity, focus, and relaxation. “With practice, a meditative state can decrease stress, increase your sense of self-awareness, calm manner, and is also proven to increase your sense of empathy” (Gladding). In addition to these benefits, meditation can also be used as a treatment tool in addiction recovery. Addiction, especially to opiates and heroin, are a growing national epidemic. The American Society of Addiction Medicine defines addiction as a primary, chronic, neurobiological disease that is influenced by genetic, psychosocial, and environmental factors that is characterized by strong cravings, compulsive use, and a lack of control to stop despite the harm it may cause (Graham, Schultz, Mayo-Smith, Ries, & Wilford qtd. in Young, De Amas DeLorenzi, Cunningham 59). According to the United Nations Office on Drugs and Crime, approximately 200 million people worldwide are current drug users. In the United States, an estimated 22.6 million were diagnosed with substance dependence or abuse in 2006 (Zgierska et al. 4). With the recent reports in the community and across the nation of the rise in heroin addiction and heroin-related deaths, the number of addicts is substantially higher today than when that statistic was reported in 2006: “Overall, the death rate from heroin overdose, in the 28 states that reported complete information to the CDC, increased from 1.0 to 2.1 per 100,000 between 2010 and 2012” (Reinburg). Addiction to opiates is a serious and fatal problem that is only continuing to grow. Meditating regularly, has the capacity to produce a positive emotional state, clear and concise thinking patterns, and feelings of inner peace. As part of a humanitarian effort, we as a community must do something to alleviate these deadly addictions.

The Addiction Loop

The act of addiction is simply positive and negative reinforcements acting together. As Jason Brewer explains, “Addictions often begin with a simple pairing of a drug or behavior with an affective state” (Brewer 226). Positive reinforcement is the addition of a positive stimulus to increase the likelihood of an event reoccurring and negative reinforcement is the removal of negative or unpleasant stimulus increasing the likelihood of an event occurring again in the future (226). For example, a patient is prescribed painkillers because of the chronic back pain they have been experiencing. When the patients back hurts they ingest the recommended dosage of painkillers. The medicine relieves the pain and leaves the body with a feeling of complete numbness and bliss. Once all the pain has subsided, the patient is left in a opiate induced state, this addition of positive stimulus is positive reinforcement. When the pain starts returning a couple hours later, this is the negative reinforcement. Because of the pain, they ingest another dosage of the opiates, which repeats the positive reinforcement.
Over time, the patient will develop a tolerance to these painkillers and it will take a larger dosage to achieve the same effect. The constant back and forth between positive reinforcement and negative reinforcement with any kind of substance abuse will produce what Jason Brewer refers to as a deadly addiction loop (226).

When discussing the addiction loop, another term that is important to understand is “dependent origination.” According to Brewer, dependent origination is how our brain processes certain cues in our environment and the world around us. This processing depends on how we recall memories of our previous experiences. They are interpreted one of two ways, as pleasant, or unpleasant. If the experience is pleasant the brain wants to continue, if unpleasant it wants to stop (226). When a substance is craved, the “craving leads to clinging or attachment to the object. Behavior that perpetuates the pleasant state, giving rise to the ‘birth’ of an identity around the object through the laying down of a memory” (227-228). Addiction is as much positive and negative reinforcement along with associative memory as it is the substance you are addicted to. Jason Brewer continues his explanation of the addiction loop by stating that “the loop has been seen in both animal and human studies, suggesting that this process is primitive and therefore often resistant to cognitive manipulation” (Brewer 226). If addiction is such a primal process, how are we to fight it?

**Meditation in Addiction Counseling**

The answer is simple, and has been in practice for hundreds of years. Meditation has been used in the Buddhist faith for centuries and is the core of achieving peace in the religion. One type of meditation that the Buddhist religion encompasses is mindfulness. Mindfulness involves learning to be non-judgmental and unattached to one's thoughts in order to achieve peace and happiness (Young, De Amas DeLorenzi, and Cunningham 61). Even though meditation is an ancient teaching, only as recent as the early 1970s did scientists begin to study its medical implications. Young, De Amas DeLorenzi, and Cunningham examined meditation with a scientific and therapeutic perspective. In a review of using meditation in addiction counseling, therapists have concluded that using meditation has “underlying curative mechanisms that can aid a person in recovery, including exposure, acceptance, self-management, relaxation, lack of judgment, awareness, and cognitive change” (Young, De Amas DeLorenzi, and Cunningham 67). The practice of meditation is now being more widely recognized as a tool in various forms of recovery.

Mindfulness and alternative meditative therapies are already being used as forms of treatment for intravenous drug users. In a study conducted in 1997, 548 participants over the age of 18 were recruited from clean needle exchange programs and methadone clinics in the greater Rhode Island area. All of these participants had been diagnosed with a chronic addiction to cocaine and/or heroin and were active users. These individuals took part in a study in the use of complementary and alternative medicine therapies, or CAM, on addiction recovery. For six months, participants were asked to use one or more CAM therapies, such as religious healing, relaxation techniques, meditation, drinking teas, acupuncture and massage. Members of the study reported a self-perceived effectiveness of “4.1 out of 5” in regards to CAM therapies (Manheimer, Anderson, and Stein 408). In using these alternative therapies, other effective positive outcomes were measured among users: 65%
used CAM to “help relieve or get rid of pain,” 57% to “help stop using drugs,” 47% to “help relieve withdrawal symptoms,” and 13% to “increase the effects of opiates” (408). This study effectively shows the use of alternative therapies on IDU’s and demonstrates a benefit in aiding addiction recovery. Even though many people believe that a person has to hit “rock bottom” before they can make a change, 57% of participants said meditation helped them stop using drugs (Manheimer, Anderson, Stein 408).

“Hitting Rock Bottom”

Many recovery programs such as Narcotics Anonymous, AA, and Al-Anon suggest that an addict must hit “rock bottom” before they are able to fully recover, but that is not always the case (Ries et al 862). It is possible to fully recover from an addiction without hitting “rock bottom.” The term “hitting rock bottom” refers to an addict’s life being unmanageable, completely lacking discipline and feeling yourself spiral out of control (Knaus). “People with less emotional stress and fewer severe problems showed greater motivation to kick their addictive habits” (Knaus). Making a change for the better can be as simple as realizing that you can’t keep living the way you are and that you have to change something. Although a lot of the time addicts have trouble seeing that they are spiraling out of control, most addicts need help realizing that they have to make a change. “The strength of your expectations for change can ignite self-correction” (Knaus).

The Role of Stress and Addiction Relapse

It has long been known that stress increases the risk of drug abuse and relapse. In the early stages of abstinence, common symptoms include increases in irritability, anxiety, emotional distress, sleep problems, dysphoria, aggressive behaviors, and excessively craving the drug of choice. Rajita Sinha, professor at Yale University School of Medicine, conducts research about addiction. One line of research that she focuses on examining the effects of stress and drug related cues on the cravings experienced by alcoholics, cocaine-dependent individuals, and naltrexone-treated, opiate-dependent individuals. Naltrexone is an opioid receptor antagonist used primarily in the management of opiate dependence, similar to that of suboxone. Sinha and her staff at Yale “examined drug craving and reactivity in treatment engaged, abstinent, and addicted individuals who were exposed to stressful and non-stressful drug cue situations and neutral-relaxing situations using personalized imagery procedures as the induction method” (Sinha 390). She initially determined that when addicted individuals were exposed to stress imagery, it produced multiple emotions of fear, sadness, and anger. Additionally, imagery of personal stressors produced significant increases in cocaine craving as well as increases in heart rate, salivary cortisol, drug cravings, and subjective anxiety. Sinha’s research brings to life how complicated addictions can be, along with the struggles and added stress of attempting to become abstinent.

Because stress increases drug cravings, Sinha and her team also used MRI scans to examine the effects of stress on the brain. Previous brain scanning imagery results have shown that exposure to drug cues are known to increase craving and resulted in the activation of the amygdala and prefrontal cortex’s in the brain. In Sinha’s control study, cocaine-dependent individuals exhibited similar levels of anguish during stress inducing exposures; however, they lacked activation in emotional regulation.
areas of the brain such as the hippocampus and anterior cingulate cortex. Although the patients lacked activation in those areas that help with emotional regulation, they had increased activity in the caudate and dorsal striatum regions during stress inducing exposures. This activated areas of the brain was significantly associated with “stress induced cravings” (Sinha 390). This data clearly shows that the stress pathways are altered in addicted individuals. “They also indicate that a hyper-responsive distress state, that is susceptible to compulsive drug seeking, ensues among addicted individuals who are in early recovery” (Sinha 391). This increased sensitivity to drug craving and stress, along with the decreased ability to recover after a stress cue exposure, represents a dysfunctional state that could increase susceptibility to relapse.

The Role of Spirituality in Addiction Recovery

Considering the susceptibility to stress related relapse, many addiction treatment centers use a form of spirituality as part of their drug treatment plan. Addiction treatment centers use many different techniques as part of their treatment plan. Most treatment centers implement one of the four treatment modalities: physical health including nutrition, exercise, and relaxation, recreation and adventure-based activities, religious and spiritual practices, and the use of specific therapy modalities (Priester et al. 315). The 12-step program, utilized the most in Alcoholics Anonymous and Narcotics Anonymous, is also rooted in spirituality as indicated in steps 3, 5, 6, 7, 11 and 12 referring to giving yourself over to a higher power.

Prayer is also an important part of the 12-step program, calling for group prayer during meetings and encouragement to pray outside of meetings in their daily life. As Priester et al. notes “studies have shown that patients involved in twelve step recovery programs, who had abstained from substance abuse had used prayer (or meditation) more frequently than subjects who had relapsed” (316). There is something to be said for prayer as part of addiction recovery, and giving yourself over to a higher power. Although these practices are not conventional in medical detox, it is widely incorporated in addiction recovery programs. In a survey of 240 drug treatment centers Priester et al. gathered information from various treatment facilities concerning the use of holistic treatments, 12 step programs as well as prayer and meditation. The treatment facilities were randomly selected from the Substance Abuse and Mental Health Services Administration Treatment Provider Directory and were asked if their program was 12-step based, if prayer and meditation are implemented as part of a treatment plan, and if holistic clinical practices were used. Out of the 240 treatment centers surveyed, 139 responded to the survey, and an astounding 91% percent of treatment centers identified themselves with a twelve-step system with implemented prayer, and meditation as part of routine treatment (Jana-Masri, Jashinsky, Jones, Priester, Scherer, Steinfeldt, Vang 319). Of the treatment centers surveyed, 26% actively included prayer and 58% percent used some type of meditation (319). This number is remarkable, considering that meditation has only been studied for its medical benefits since the 1970s. These statistics indicate that meditation is a significantly important aspect in the treatment of drug addicts.

What Is Meditation?

Meditation is much more than just taking a second to relax and focus on peaceful
thought, meditation is an entire “state of thoughtful awareness”. Meditation is an effective way to ease the stress and suffering in addiction, reduce craving, pain and attachment, increase mindfulness, develop a healthy way to cope, increase internal reflection, improve self-esteem, increase empathy, and change brain activity patterns (Gladding). Meditation and mindfulness based therapies possess underlying mechanisms such as exposure, self-acceptance, self-awareness and profound cognitive change that can aid a person in addiction recovery. These important milestones in addiction recovery may not be met in other treatment plans. Pairing meditation with other forms of treatment would ensure that the patient is addressing all of the emotional issues needed to make full recovery successfully. Meditation “is a state of profound, deep peace that occurs when the mind is calm and silent, yet completely alert. This is just the beginning of an inner transformation that takes us to a higher level of awareness” (“Meditation Basics”). In addition to many other health benefits like decreasing blood pressure and aiding in reaching a higher level of consciousness, meditation can be an effective tool in the treatment of opiate addiction.

How Meditation Changes Your Brain

Christopher Germer addresses mindfulness in a clear manner. Mindfulness, he says, “is a skill that allows us to be less reactive to what is happening in the moment. It is a way of relating to all experiences—positive, negative and neutral—such that our overall suffering diminishes and our sense of well-being increases” (Germer 4). Meditation is a way to ease suffering, decrease stress, and take a moment to relax and reflect on the events of the day. The act of meditating actually changes the way that your brain works.

In the article “This is Your Brain on Meditation” Rebecca Gladding addresses the six separate parts of the brain that are affected when you meditate. The amygdala, or the fear center of the brain, is responsible for emotional reactions and the “fight-or-flight” response. The insula is another part of the brain that is affected. The insula is the part of the brain that monitors body sensations. Along with other parts of the brain, it helps interpret how strongly you respond to what your body senses. The medial prefrontal cortex, or mPFC is the part of the brain that is self-reflective, evaluates your perspective and experiences. The medial prefrontal cortex is also responsible for engaging in social interactions, inferring other people’s state of mind and feeling empathy for others. There are two sections of the mPFC that are also affected by meditation: the dorsomedial prefrontal cortex and the ventromedial medial prefrontal cortex. The dorsomedial prefrontal cortex is another part of the brain that deals with empathy, and the ventromedial medial prefrontal cortex is the part of the brain that is associated with making connections between yourself and others. The last part of the brain that is affected by meditation is the lateral prefrontal cortex, which allows you to look at things from a more rational, logical and balanced perspective (Gladding).

As you begin to meditate, the connection between the ventromedial medial prefrontal cortex, or vmPFC, and the insula begin to break down and disconnect. “As this connection withers, you will no longer assume that a bodily sensation or momentary feeling of fear means something is wrong with you” (Gladding). This means that there is a significant correlation between
meditating and a decrease in anxiety. Because of the strengthened self-assessment center or lateral prefrontal cortex, you are more readily able to see those sensations for what they are and not respond as strongly to them. The second part of your brain to react to meditation is the lateral prefrontal cortex and the amygdala. After practicing meditation, the connection between the lateral prefrontal cortex and the amygdala, or fear center of the brain is strengthened. This strengthened connection means that when experiencing a bodily sensation you are able to react to that sensation with a more rational perspective rather than feel that you are in a troubled situation. The last sections of your brain that benefit from meditation are the “dorsomedial prefrontal cortex, the part involved in processing information related to people we perceive as being not like us and the bodily sensation center – involved in empathy – becomes stronger” (Gladding). These strengthened connections mean that you are able to relate in a more positive manner to others, which explains why meditation increases empathy. Along with increasing empathy and increasing internal self-reflection, meditation is a great tool to use to reduce stress.

Transcendental Meditation

Transcendental Meditation is widely used in addiction programs where meditation is implemented. Transcendental Meditation is a meditation technique involving sitting quietly with your eyes closed with the use of a sound or mantra and is practiced for 15–20 minutes twice per day. Benefits of TM are “greater inner calm throughout the day, reduced cortisol levels, normalized blood pressure, reduced insomnia, lower risk of heart attack and stroke, reduced anxiety and depression, improved brain function and memory” (Maharishi Foundation USA). The first documented study of the effects of TM was conducted in 1971 in Sweden by Arthur Aron and Elaine N. Aron. Twenty known drug users attended a lecture on Transcendental Meditation. The twenty volunteers were split into two groups. One group of ten were instructed to utilize TM techniques and went through 3 months of group therapy. The control group of ten were introduced to 3 months of group therapy as well without the instruction in TM. In both groups all drug use was reported monthly. With the implementation of TM and group therapy, results showed a dramatic decrease of all drug use. In addition to Transcendental Meditation techniques and group therapy, various personality tests were also administered to the volunteers. The first group who were instructed in TM showed “significantly greater positive results such as strong increases in adjustment, psychological stability and decreases in anxiety, tension-restlessness, and psychomotor coordination” (Aron and Aron 4). This research clearly states the immense benefits of meditation.

Conclusion

Meditation and mindfulness is the future of addiction recovery. Learning how to meditate and developing your abilities is a very useful coping skill, and in fact can offer addicts a way to get through the initial suffering of abstinence. Several studies have already identified mental and physical benefits associated with meditation including an increase in self-perception and empathy; along with normalized blood pressure, reduce anxiety and depression. Meditation is a tool you can use your whole life; it’s something you will always carry with you that offers you a healthy way to cope, improve self-esteem, increase empathy, and relate to others in a more
positive manner. Considering the fact that meditation has only been studied for its medical benefits for the past four decades, imagine what more we could uncover in the years to come.

Works Cited


