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### The Effectiveness of Telehealth Mindfulness Meditation in Reducing Substance Use Craving in an Outpatient Treatment Facility

Dewi Anisa Qisti

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**The Effectiveness of Telehealth Mindfulness Meditation in Reducing  
Substance Use Craving in an Outpatient Treatment Facility**

by

Dewi Anisa Qisti

A Thesis

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in

Rehabilitation and Addiction Counselor Education

October, 2022

Thesis Paper Committee:  
Amy H Knopf, Chairperson  
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## Abstract

The current study aims to examine the effectiveness of mindfulness meditation via telehealth as part of routine care in an outpatient substance use treatment program in Jakarta, Indonesia. The randomized controlled study design was performed to find the difference between the mean score of the Mindfulness Attention and Awareness Scale (MAAS) and the Aggregated Drug Craving Scale (ADCS) level before and after the intervention for the treatment group (n=15) and the control group (n=15). The two 2-way ANOVA (groups x times) was conducted to find the difference in ADCS and MAAS scores between the treatment group who received the Treatment as Usual (TAU) plus the additional four weekly telehealth mindfulness meditation sessions and the control group who received the TAU only. This study found that there was no significant difference in the average score of the MAAS ( $F(1, 56) = .147, p = .702, \eta^2 = .003$ ) and the ADCS ( $F(1, 56) = .358, p = .552, \eta^2 = .006$ ) for any interaction of groups, both treatment and control groups. There was also no significant difference in the average score of the MAAS score ( $F(1, 56) = .077, p = .783, \eta^2 = .001$ ) and the ADCS score ( $F(1, 56) = 1.88, p = .175, \eta^2 = .033$ ) for any type of intervention times, both at pretest and posttest. Hence, this study concluded that the TAU with added telehealth mindfulness meditation is not more effective than the TAU-only in reducing substance use craving.

### **Acknowledgments**

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Thank you to everyone who has taken the time to be part of my mindfulness meditation project. I hope this study can provide valuable resources for substance use disorder treatment.

I am most thankful to everyone who has supported me, especially my mom, dad, and mentor; I am overwhelmed with gratitude.

Finally, I dedicate this thesis to my daughters, Carissa and Carinna. This journey would never be completed without your sacrifice. I do believe someday, you both will understand and appreciate this journey. This journey is ours, thank you!

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## **Chapter I: Introduction and Statement of the Problem**

The COVID-19 Pandemic has brought major challenges to many aspects of human life. The World Health Organization (WHO) recommends social distancing and social restriction to prevent the spread of the COVID-19 virus that has been in existence since May 2020. Many countries have been using strategies to lower the cases through vaccination, mandatory face mask usage in public facilities, avoiding physical touch, flight restrictions to countries with a high number of cases, enforcing online learning, work-from-home policies, etc. People are required to avoid crowds, and many prefer staying at home, especially during the first virus outbreak in 2020.

There were a lot of uncertainties, especially at the beginning of the Pandemic, the fear of safety and concerns of getting infected, the closure of public facilities, the overwhelming information from media, quarantine, and job insecurity, all of which triggered the mental health problems. Those situations may affect individuals' mental and physical health. Studies from Benke et al. (2020) and Lahiri et al. (2021) identify social distancing as a major factor that can increase anxiety, depression, and distress. The hardship of making a person-to-person connection can result in a loss of a sense of belonging (Sikali, 2020) and several negative mental health implications (Dezecache et al., 2020). Another study by Xiong et al. (2020) also identified the impact of the surge of COVID-19 cases on greater issues in society such as employment losses, social isolation, financial burden, and exacerbating mental health symptoms including depression, fear, and anxiety.

The social changes caused by the Pandemic certainly worsened some at-risk populations during this period. Emerging evidence has identified several populations at risk for high levels of psychological distress during the Pandemic, including women, individuals living in low-income homes, people with disabilities, those with prior histories of mental illness, and people with SUD (Alonzi et al., 2020; Cevik & Urgan, 2021; Rodríguez-Rey et al., 2020). During the Pandemic, there was an increasing number of substance misuse as self-medication and coping mechanisms (Brooks et al., 2020; Slaven et al., 2017). Accordingly, people with SUD are at greater risk of recurrent hospitalization due to elevated SUD-related preexisting health conditions such as physical health problems (Jemberie et al., 2020).

The impact of COVID-19 is also unprecedented and devastating to the treatment facilities for people with SUD. Quarantine, physical distancing, and temporary closure of public facilities that mitigate the consequences of the COVID-19 Pandemic have undermined SUD clients' access to treatment and recovery services, especially during the onset period of the Pandemic (Lin et al., 2022). Another study from Basu (2020) mentioned that the temporary closure of healthcare facilities during the COVID-19 has deprived access to patients with regular medication, including people with substance use disorders.

The restriction of person-to-person appointments impacts the delivery strategies of the treatment program. It requires hospitals, clinics, or other healthcare facilities to engage in more new and non-traditional forms of treatment and prevention strategies. Many health care facilities, mental health treatment facilities, and other health services could not serve walk-in clients as they were concerned about getting infected. The reduced transportation services during pandemics were also a barrier for clients to come to the treatment site. Thus, most treatment

facilities, including substance use treatment, transitioned to telehealth services options that will likely continue well past the Pandemic.

Based on the report from United Nations Office on Drugs and Crime (2021) on World Drug Report, the number of drug users is expected to increase by 11% globally by 2030. About 275 million people worldwide used drugs in 2020, up from 226 million in 2010, a 22% increase. Accordingly, many countries noted a rise in marijuana use and the use of non-medical pharmaceutical drugs such as benzodiazepines due to this stressful situation. Abramson (2021) stated that based on data from the Centers for Disease Control and Prevention, as of June 2020, 13% of Americans reported starting or increasing substance use as a way of coping with stress or emotions related to COVID-19. Overdoses have also spiked since the onset of the pandemic. Accordingly, the Overdose Detection Mapping Application Program (ODMAP), an application system to track and analyze overdoses in the United States, shows that the early months of the pandemic brought an 18% increase nationwide in overdose. The report from American Medical Association (2020) also provides the spiked numbers of drug trend in 2020 more than 40 states have increasing opioid-related mortality along with ongoing concerns for those with substance use disorders.

Compared to the situation in Indonesia, there is a similarity in the increasing number of people who use drugs and alcohol during the Pandemic. The drug trend during social distancing in 2021 tended to increase compared to 2019. The rising number of substance users during the Pandemic was followed by major loss events such as the death of family members or friends, financial concerns, health issues, etc. On the article by Marhaenjati & Santosa (2021), the survey from National Narcotics Board Republic of Indonesia showed that the prevalence of people who

use drugs increased from 3.4 million in 2019 to 3.6 million in 2021. Based on the same article, it also mentioned that the National Narcotics Board Republic of Indonesia also released the number of people who have been exposed to illicit drugs in Indonesia has increased from 4.5 million in 2019 to 4.8 million in 2021.

Thus, considering these numbers, continuity of treatment and care during the Pandemic was essential to address emerging and ongoing SUD problems; as such, the onset of the COVID-19 Pandemic brought about tremendous growth in the use of telehealth across a range of healthcare providers and medical conditions, including substance use treatment facilities. Many treatment facilities in Indonesia, including outpatient programs, no longer provide an in-person program as the number of COVID-19 cases increases. Outpatient treatment is now preferred to provide individual and group therapy through an online platform and requires less on-site walk-in treatment.

In the middle of the rising use of telehealth services, treatment facilities may find it challenging to maintain clients' sobriety through virtual access. Some challenges include difficulties in engagement and rapport and the loss of visual contact to observe more clients' facial expressions and craving behavior (Searby & Burr, 2021). In contrast, in-person meetings allow facilitators or counselors to monitor the craving behavior and Post-Acute-Withdrawal Symptoms (PAWS) more easily than through a screen. Craving, which is typically characterized as an overwhelming or compelling desire to consume drugs or alcohol, does not always precede consumption, nor does it always lead to smoking, drinking, or drug usage (Tiffany, 1990). Nonetheless, the craving concept has been central to discussions of addiction, largely because it is assumed to be the main trigger factor for relapses in drugs and alcohol (de Bruijn et al., 2005).

Furthermore, craving can be a predictive factor in determining treatment success (Panlilio et al., 2019). It is essential for treatment facilities to identify the craving signs. Research shows a significant relationship between emotional dysregulation, negative affect, and depression with craving behavior (Marino et al., 2019). Consequently, training to teach people with SUDs emotional regulation skills seems to be effective in preventing addiction vulnerability and reducing craving, relapse, and associated emotional problems. Mindfulness meditation practice is considered a way to manage emotional regulation that underlies addictive behaviors, cravings, and relapse. It is regarded as a promising treatment for creating awareness and leading people to accept thoughts, feelings, and emotions through mindfulness practice and as a coping strategy in the face of high-risk situations. The term of "mindfulness" refers to maintaining a moment-by-moment awareness of one's thoughts, feelings, bodily sensations, and surrounding environment. According to Kabat-Zinn, "mindfulness emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p.145).

Additionally, mindfulness enhances cognitive awareness and helps monitor automatic cognitive and emotional processes (Garland et al., 2009). Mindfulness also increases acceptance of thoughts and feelings without judging them and focusing on what is occurring in the present moment instead of rehashing the past or planning the future (Kabat-Zinn, 2003). Hence, considering the advantage of enhancing awareness in identifying situations that are related to craving thoughts, the present study evaluated the use of mindfulness meditation via telehealth platforms in the substance use outpatient treatment facility.

## **The Operational Definitions**

### ***The Effectiveness***

The effectiveness was determined by the participants showing statistically significantly less duration and frequency of craving alcohol and drugs after participating in the four-weekly mindfulness meditation program.

### ***Mindfulness Meditation***

Mindfulness meditation is determined by practicing weekly meditation through guided meditation video as an additional treatment during the outpatient treatment program.

### ***Outpatient Program***

Outpatient program defined by an intensive program for substance use disorders that provide individual and group meetings and for clients that have been diagnosed with substance use disorders through comprehensive assessment.

### ***Craving***

This study determines substance use craving by using the Aggregated Drug Craving Scale (ADCS).

### ***Substance Use Disorders***

Substance use disorders are determined by individuals that are admitted to the substance use program through comprehensive assessment.

## **Chapter II: Literature Review**

This section covers a range of literature that is intended to put the mindfulness technique in context with substance use treatment. This section also looks at a study which utilized a mindfulness meditation approach via telehealth as its primary technique to reduce the substance craving. Prior to this, this chapter begins by examining the definition and history of the mindfulness study and how it has been used successfully in other fields of mental health.

### **The Definition and History of Mindfulness Study**

The mindfulness method has a history of use in various fields. It is well-known that psychological well-being has been attributed to the definition of mindfulness theoretically and empirically. The awareness and nonjudgmental acceptance elements of one's present moments are the core elements of mindfulness. Some studies found that achieving Mindfulness is a potentially effective treatment against psychological distress such as anxiety, anger, and fear, which involves the maladaptive tendencies to suppress feelings and thoughts (Kabat-Zinn, 1990).

Most researchers in different studies describe Mindfulness in the same way. One of the common mindfulness definitions is by Baer (2003), which defines it as "the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise" (p. 125). Even though some researchers work almost exclusively on the attentional aspects of the mindfulness (Brown & Ryan, 2003), many researchers and practitioners adopt the model from Bishop (2002) in general, which explained that mindfulness encompasses two components: self-regulation of attention and adoption of a particular orientation towards one's experiences. Mindfulness technique requires both the ability to anchor individual's attention on what is

occurring and also able to switch the attention intentionally from one moment of the experience to another.

Mindfulness meditation helps increase the attention to bodily sensation nonjudgmentally, which in turn changes the way individual views moments to moments experiences (Gunaratana, 2011). It allows individuals to change the way their automatic reactions into non-judgment responses. Kabat-Zinn (1990) stated the essence of mindfulness is when we raise awareness and increase our attention to everything we do daily. The behavior of raising attention becomes a coping mechanism to address an individual's irrational thoughts and beliefs (Gunaratana, 2011). Kabat-Zinn (1994) also emphasizes the importance of paying attention without holding onto personal judgment that will encourage a sense of consciousness.

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Interventions based on the dynamic interactions of mind and body, especially meditation and mindfulness, are the ones that originated from Eastern therapies and have been frequently practiced as psychological therapeutic programs in recent years (Kabat-Zinn, 2003). It is



common to utilize the term of mindfulness to describe several terms such as a psychological trait, a practice of cultivating awareness (e.g., mindfulness meditation), state of awareness, or a psychological and mental process (Germer et al., 2005). One of the most commonly quoted explanations of mindfulness is the awareness that emerges through “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). There is similar definition of mindfulness that provided by most other researchers. One of common description from Baer (2003), defines mindfulness as “the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise” (p. 125).

The meaning of "acceptance" in the context of mindfulness is not similar to passive behavior or resignation (Cardaciotto et al., 2008). Instead, the term of acceptance in this context refers to the ability to experience with full awareness and expand cognitive flexibility without resorting to the extreme judgment of the experience. Current conceptualizations of mindfulness in clinical psychology point to two primary, essential elements of mindfulness: Awareness of one's moment-to-moment experience nonjudgmentally and acceptance.

### **Studies of Mindfulness Practices**

As mindfulness gained increasing popularity, more studies were conducted to investigate its effectiveness in promoting clients' well-being. The following studies illustrated the information about the benefits of mindfulness meditation in psychological and spiritual well-being. In a quasi-experimental pilot study, Bryan et al. (2021) examined the ten-week of yoga and mindfulness meditation used to improve the spiritual well-being of cancer survivors. The results showed that there was a significant improvement in the spiritual well-being of cancer survivors as a vital role in health care approaches. Accordingly, a study by Fazia et al. (2021) demonstrated the benefits of mindfulness practices in increasing the well-being of a working

population. Over 59 participants who were involved in the study received 12 weeks of mindfulness sessions, which showed lower stress and higher self-compassion that promoting well-being.

Moreover, a study by Whitton (2019) examined the Mindfulness-Based Intervention that adapted from Mindfulness-Based Cognitive Therapy and Mindfulness-Based Stress Reduction to improve the psychological well-being of patients in a mental health hospital. Unfortunately, the study did not provide the information on mental health diagnosis of the participants, however, after eight-week intervention, the results showed improvement in participants' well-being score. Accordingly, a more specific quasi-experimental study from Yela et al. (2022) demonstrated the benefit of mindfulness training in increasing self-compassion, enhancing mental health, and improving well-being. The results for over 50 participants that involved in Spain and Portugal showed that mindfulness training can increase self-compassion and significantly correlated with the decreasing anxiety, depression, and psychological well-being.

Mindfulness has been found to be more effective if it is combined with other behavioral treatment approaches and to increase functional recovery in various clients. When combining mindfulness with Cognitive Behavioral Therapy (CBT), mindfulness showed a positive effect on therapy process (Bowen et al., 2014). Studies below explained the promising results when combining mindfulness in a mental health recovery. Study from Özdemir & Kavak Budak (2022) showed Mindfulness-Based Stress Reduction (MBSR) training can increase the level of hope and psychological well-being for patients with schizophrenia. The study compared control group who received the psychoeducation only treatment and treatment group who received psychoeducation plus MBSR in eight weeks of program. The results showed that the psychoeducation plus

MBSR treatment gave more effective results in increasing the well-being and hope of patients to support their recovery. Along the same lines, randomized controlled trial conducted by Schuling et al. (2020) studied the combination of Mindfulness-Based Cognitive Therapy (MBCT) and medical and psychological treatments for clients with depression. The results on 61 participants showed significant reducing depressive symptoms for clients who received the medical and psychological treatment combined with MBCT.

### **Previously Attempted Mindfulness Meditation in Substance Use Treatment**

In an effort to minimize relapse and improve client outcomes, SUD treatment programs have begun to introduce complementary and alternative medicine practices such as yoga and mindfulness. Mindfulness-based intervention also shows promising results in the substance use treatment. Studies below illustrated the use of mindfulness intervention in substance use treatment facilities. The findings from a study conducted by Alizadehgoradel et al. (2019) suggests that Mindfulness-Based Substance Abuse Treatment (MBSAT) successfully improved response inhibition, risky decision-making, working memory, and cognitive flexibility in adolescence. More studies that examined the Mindfulness-Based Relapse Prevention (MBRP) from Zullig et al. (2021) to examine the use of MBRP for clients who received the medication for Opioid Use Disorder. The results suggested that MBRP can be implemented as an outpatient therapy for individuals with Opioid Use disorder who take the medication as it showed significant decrease in craving and relapse after receiving the treatment.

In order to examine the effect of mindfulness, Jain et al. (2007) mentioned in their study that the mechanisms that underly mindfulness training can result in the flexible cognitive style in problem-solving. The judgment-free attitude along with acceptance can reduce anxiety and

prevent repetitive thoughts such as rumination and worry resulting in emotional regulation. The working of mindfulness in reducing craving and preventing relapse can be described in three steps. Firstly, it is started by increasing awareness in identifying the present moment. Then, a person can learn how to recognize some alternatives of choices in deciding, and to coordinate the stressors and the emotions instead of reacting automatically to negative thoughts. Second, the individual is enabled to overcome the fear or the pressure and say "no" to himself. This makes the individual reach equilibrium and increases his self-confidence and assertiveness. Third, being in the present moment with others leads to paying more attention to the support system such as relationship and be in the treatment, and consequently continuation of the sobriety.

### **Mindfulness and Substance Use Craving**

Evidence suggests that people with substance use disorders struggle to maintain their sobriety due to relapse (Brandon et. al, 2007). This means that for some people, relapse, or a return to drug use after an attempt to stop, may occur as a part of the process. The most influential social-cognitive behavioral model of relapse proposed by Marlatt has emerged from the recognition that relapse is the result of a series of maladaptive responses to internal or external stressors. Like most other models, this one also proposes that individual experiences a sense of perceived control while maintaining abstinence. Even though newer treatments are designed to help with relapse prevention, the number of relapses considered is still high. The relapsing and craving nature of substance addiction has made it clear that relapse prevention is an essential treatment component for long-term sobriety, emphasizing on the attention that propose to address this need.

Craving is the desire to use substances based on personal experience. It creates thoughts that make it difficult to focus on anything other than the substance (Bowen et al., 2014). According to study from Tiffany (1990), most substance use craving among dependent users occurs without conscious thought and thus bypasses momentary craving urges. In this model, momentary increases in craving are conscious cues that indicate that substance use is currently not available, for examples at office, taking care of children, trying to quit). An individual experiences increasing momentary cravings is then faced with a decision as to whether to engage in drug-seeking behavior, such as contacting dealers or meeting people who have the access to illicit drugs, or engaging in inhibitory control, such as inhibiting prepotent thoughts, feelings, and behaviors in order to be in line with treatment goals.

Studies from Garrison et al. (2015) showed that mindfulness exercises reduced the craving of smoking. The practicing of mindfulness also can decrease the methamphetamine dependent craving on males (Shareh et al., 2018). Other results to prove the use of Mindfulness in reducing Substance Use craving from Temme and Wang (2018) that examined the 51 participants using self-reported Assessment of Warning Signs of Relapse Scale (AWARE), and the Five Facet Mindfulness Questionnaire (FFMQ). The study demonstrated that the responses of awareness and nonjudgment were related to ability to identify the warning signs of relapse. Further, observing and nonjudgment abilities were associated with changes in negative mood that could influence to the relapse and craving thoughts. Hence, it explained how the awareness component of mindfulness state can be associated to external behavior of substance use.

Along with the development of combining mindfulness into therapeutic treatment, there has been much theoretical and empirical work illustrating the impact of mindfulness on reducing

the symptoms of lapse/relapse in substance use. Treloar et al. (2010) stated that if addiction treatments are complemented with mindfulness, they might successfully influence substance users' judgement and aversion that may lead to craving. Individuals with SUDs can recognize the early warning signs of craving or relapse by practicing the mechanism of mindfulness. In one randomized trial study by Witkiewitz and Bowen (2010) concluded that practicing meditation contributes a significant factor for people with substance use disorders to stay abstinent. Over 260 participants in the study were divided into two groups in treatment and control group. The mindfulness training completed by the treatment group for eight 2-hour session weekly. It revealed that mindfulness training might help clients with SUDs by attenuating the relation between negative cognitive, emotional states and subjective experiences of craving. Along with the studies, Abed & Ansari Shahidi (2019) examined the use of Mindfulness-Based Relapse Prevention for clients who were receiving methadone therapy. Over the 55 Iranian adult males that involved in the study (treatment group n=26) obtained lower lapse percentage after received the mindfulness treatment.

### **The Use of Telehealth Platform in Treatment Facilities**

Those studies above have examined the application of mindfulness in substance use treatment facilities delivered in person. However, limited research has been found to identify how mindfulness meditation reduces craving via online platforms or telehealth. Some robust evidence demonstrates that telehealth is at least as effective as in-person care for several behavioral health conditions—particularly for depression and anxiety disorders. Some research also shows that patients with behavioral health conditions are generally satisfied with telehealth, both in terms of the patient's clinical experience and benefits of improved access to and convenience of care.

Lin et al. (2022) studied telehealth or telemedicine as the most substantial change that the COVID-19 Pandemic posed in clinical services. Prior studies of patient perceptions of telehealth, specifically for SUD care, have shown superior levels of patient satisfaction with telehealth treatment comparable to in-person therapy. However, the existing literature examining SUD care via telehealth is limited to the client's satisfaction, not the programs' effectiveness. Moreover, most studies applied mindfulness meditation in in-person treatment settings. Only a few studies have determined the effectiveness of mindfulness meditation through online platforms.

Telehealth, nowadays, has become a preferred treatment delivery method including in substance use treatment facilities. Therefore, the present study addresses the limitations in the existing literature by examining the substance use craving and mindfulness scale across, before, and after the intervention. This study aims to investigate the use of telehealth mindfulness meditation as an additional treatment in the outpatient treatment facility in Jakarta, Indonesia. Treatment group and control group participants received treatment as usual (TAU), but only participants in the treatment group received the mindfulness meditation treatment via telehealth in an outpatient SUD treatment program as part of routine care.

## Chapter III: Methodology

### Research Design

This study examined the use of telehealth mindfulness meditation with randomized controlled trial design in an outpatient treatment facility in Jakarta, Indonesia. Thirty participants attended outpatient treatment as their usual program that involves comprehensive assessments, eight individual treatment sessions, two group sessions and psychoeducation sessions. Fifteen participants in the treatment group received additional four-weekly telehealth mindfulness meditation sessions. Finally, data of 30 participants was analyzed with the SPSS 26 version software.

### Participants

The study consisted of 30 participants ages 18 to 60 years old who were diagnosed with substance use disorders. Thirty participants were divided into two groups 15 participants were in the control group and 15 participants were in the experimental group. Both groups received outpatient program treatment as usual, such as individual and group therapy, but only the experiment group received mindfulness meditation sessions.

The research inclusion criteria comprised the following:

1. Age between 18 and 60 years old
2. Diagnosed with substance use dependence through comprehensive assessment based on the Diagnostic and Statistical Manual of Mental Disorders-5th edition (DSM-5).



**Table 1***The Intervention of the Study*

Intervention	Groups	
	Control Group	Treatment Group
Pre-Intervention		
Pre-Test in Mindfulness	Yes	Yes
Pre-Test in Substance Use Craving	Yes	Yes
Intervention		
8 sessions of individual and group counseling	Yes	Yes
4 weekly sessions of the telehealth mindfulness meditation	No	Yes
Post treatment		
Post-test in mindfulness scale	Yes	Yes
Post-test in craving scale	Yes	Yes

**Setting**

The study was conducted in an outpatient substance abuse treatment facility in Jakarta, Indonesia. The facility program consisted of individual and group sessions. All clients were assigned to a fixed counselor who led the entirety of individual and group sessions. Clients and counselors met twice a week, however, due to the COVID-19 pandemic restriction, the facility delivered the treatment program via Zoom and WhatsApp video call platforms. In this study, only participants in the treatment group received four weekly mindfulness meditation sessions as an additional treatment of the treatment-as-usual (TAU). The mindfulness meditation session was conducted via Zoom for 15 minutes once a week before the participants had the counseling sessions with their assigned counselors.

## **Research Questions**

This study examines the effectiveness of mindfulness meditation via telehealth in reducing substance use craving. Research questions include:

1. Is the TAU with added telehealth mindfulness meditation more effective than the TAU in reducing substance use craving?
2. What is the magnitude of the effect of mindfulness meditation on substance use craving?

## **Measures**

Participants completed the Mindfulness Attention Awareness Scale (MAAS) and Aggregated Drug Craving Scale (ADCS) scale before and after the treatment.

### ***The Mindful Attention Awareness Scale (MAAS)***

The MAAS is a 15-item scale self-report inventory that is designed to assess a core characteristic of Mindfulness, focused attention, and awareness. According to Brown and Ryan (2003), a key component of Mindfulness is an open, focused, intentional state of attention and awareness that allows one to experience the present more deeply. Utilizing several different populations and methods, Brown and Ryan found that the MAAS had a unidimensional factor structure with very good psychometric properties. They also reported strong evidence of convergent, discriminant, criterion-related, and incremental validity. A comprehensive review of the mindfulness measurement literature (Park et al., 2013) concluded that, since its introduction in 2003, the MAAS has been the most frequently used measure of Mindfulness and has consistently demonstrated a unidimensional factor structure with strong internal consistency and test-retest reliability. The MAAS was also found to be significantly correlated with other mindfulness measures at low to moderate levels ( $r = 0.14-0.51$ ).

This scale has been adapted into the Indonesian language by Yusainy (2013) with MAAS reliability for the sample of students in Indonesia at  $\alpha = 0.770$  and  $\alpha = 0.810$  (Yusainy et al., 2018) and for the community sample at  $\alpha = 0.880$  (Yusainy & Lawrence, 2014). Participants were asked to rate their experiences on a 6-point Likert scale ranging from 1 = “always” to 6 = “never” (1 = “always”; 2 = “often”; 3 = “somewhat often”; 4 = “rarely”; 5 = “almost never”; 6 = “never”). Mindfulness scores were obtained by adding a total of 15 items on the MAAS scale. The higher the total score means the higher the individual’s level of mindfulness.

### ***The Aggregated Drug Craving Scale (ADCS)***

The ADCS is the adapted test from Penn Alcohol Craving Scale (PACS) to assess general psychoactive substance (i.e., alcohol and drug) craving rather than alcohol craving. The scale includes quantitatively defined questions on frequency, intensity, and duration of thoughts about alcohol and drugs, ability to resist drug or alcohol use if available, and overall rating of craving in the past week. Costello et al. (2020) have tested the validity and reliability of the adaptation of PACS into ADCS in clients in a substance use treatment facility, and it showed statistically significant concurrent validity in substance use and severity measurement. The study also found that the ADCS had high reliability by assessing total craving scales between the two-time points using Pearson's zero ordered correlation and the interclass correlation coefficient (ICC) ( $\alpha=0.82$ ,  $p<0.001$ ,  $ICC=0.82$ ).

After receiving permission to adapt the ADCS into the Indonesian language through emails, I followed standard translation procedures to translate the ADCS from the original English version to the Indonesian language. I am qualified to do this as I am fluent in both English and Indonesian, grew up in an Indonesian-speaking household, and have experience

living and going to university in an English-speaking country for over a year. I also have taken a graduate-level course in assessment and therefore understand the importance of item content to the overall assessment validity and reliability. Once an Indonesian language version of the ADCS was obtained, another bilingual translator conducted a back-translation, translating the Indonesian version of the ADCS back into English. The other translator was able to do the back translation due to the qualification, such as actively speaking Indonesia as a native language and English as a secondary language, having the experience of living in an English-speaking country for over one year and having completed graduate school in the psychology field. Back translation of an assessment is used to determine if the translation of the instrument led to any substantial changes in item content. Once a back-translated version of the ADCS was obtained, both translators sat down with all three versions of the ADCS: original English, Indonesian translation, and English version back-translated from Indonesian. The translators discussed item content for each item and agreed upon a final Indonesian language version of the ADCS.

## **Procedures**

### ***Preparation and Pre-Intervention***

This study assessed thirty clients with substance use disorders as participants from the outpatient treatment program in Jakarta, Indonesia. After sending the proposal and verifying the research topic with the program manager, screening was conducted based on the comprehensive assessment. Recruitment started in March and ended in April 2022, and all the assessments were completed by June 2022. All forty-five eligible clients at the outpatient treatment program received an invitation to participate in the study. Clients that were interested then filled out the informed consent before then completed the self-report craving and mindfulness scale as the baseline assessment via Google Form. After meeting the required number of participants, the

program was discussed with the director and the addiction counselors to determine the randomized treatment and control groups. Then, the counseling and mindfulness meditation schedules were managed by working with the counselors.

### ***The Intervention***

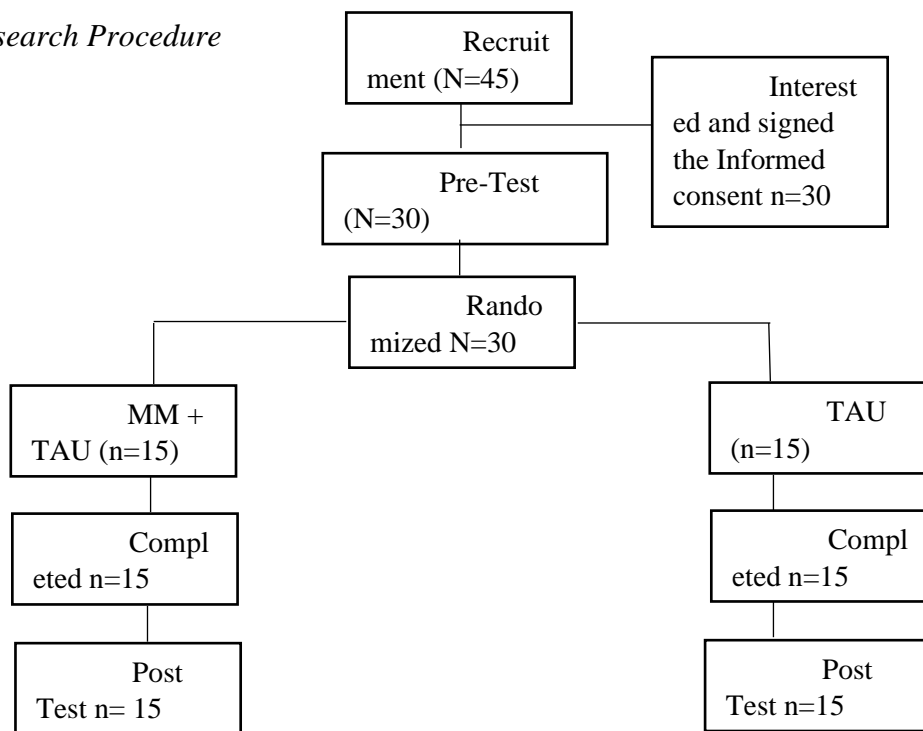
All participants received TAU which consisted of programs such as medical and psychological assessment, substance use education, individual counseling and group counseling. Participants in the treatment group received TAU and mindfulness meditation through guided meditation videos in a weekly one-on-one session via Zoom for four weeks. During this study, online videos from the meditation instructor, Tsamara Fahrana, were utilized. According to her LinkedIn account, Tsamara Fahrana is a wellness coach, yoga and meditation teacher. She also had completed her master's study in neuroscience with an emphasis on the study of mindfulness meditation in emotional regulation. Participants also received the guided meditation video files as resources to do the self-practice meditation at home. The duration of participants' self-practiced meditation was monitored every week.

Meditation can be practiced in a variety of ways. Some meditative practices require some religious background and rely heavily on religious messages. However, this study uses a general mindfulness meditation concept that emphasizes breathing techniques and the awareness of bodily sensations. To support my role as the principal investigator of this study, I completed the short Mindfulness-Based Relapse Prevention workshop held in Jakarta in 2018. I used the knowledge from the workshop to teach the participants about breathing techniques in meditation, the sit position, and how to be aware of bodily sensations.

This study was comprised of four weekly telehealth interventions. Mindfulness, the benefits of mindfulness, and the basic meditation technique were explained in the first week. In the second week, participants did a meditation that focused on the breathing technique and emotion release. The participants learned how to activate their five senses: seeing, hearing, smelling, touching, and tasting through a different guided video from the same instructor. Then, the participants were asked about their reactions and feelings about the mindfulness session. In the third week, participants learned how to sense their bodies from head to toe. During the guided meditation, participants were asked to feel their body reactions, including any pain or uncomfortable feelings. After meditation, the participants were asked if they experienced any extremely uncomfortable moments throughout the session and how they felt after the meditation. Participants were debriefed and instructed to complete the follow-up posttests after completing the program.

### ***Post-intervention***

All participants in the treatment and control group completed the post-tests on the Mindful Awareness and Attention Scale (MAAS) and the Aggregated Drug Craving Scales (ADCS). Due to the complexity of the Google Forms, the post-test survey was provided via printed paper with the help of the counselors at the treatment facility.

**Figure 1***The Research Procedure***Institutional Review Board Process**

This study involved human subjects and may result in minimal risks to individuals who have substance use disorders. As part of the requirement, I completed the CITI training for graduate students and received approval from the Institutional Review Board (IRB) at St. Cloud State University prior to conducting this study (see Appendix D).

## **Chapter IV: Results**

This study aimed to see if there was any significant reduction in substance use craving of clients in outpatient treatment programs who received the mindfulness meditation treatment. The Mindfulness Awareness Attention (MAAS) and Aggregated Drug Craving Scale (ADCS) scores of clients who received the mindfulness meditation program and clients who did not receive the mindfulness meditation program were collected. This study involved clients from the outpatient treatment facility located in Jakarta, Indonesia. Pre- and posttest were compared to see whether clients in a treatment group demonstrated lower substance use cravings after receiving four weekly telehealth mindfulness meditation than clients who did not receive the mindfulness meditation intervention. The IBM SPSS 26 program was utilized to compute the datasets for data analysis.

### **Demographic Characteristics of Participants**

The demographic data that was collected in this study included age, gender, education background, occupation, and method of substance usage (Table 2). The total of 30 participants who were involved in this study were all Indonesians. The demographic list provided below is based on each characteristic. The gender of the participants in this study included thirteen males and two females in the treatment group, and fifteen males in the control group. Gender differences in instrument responses were not addressed as they do not pertain to this study's research questions.



In the treatment group, the number of participants identified as full-time workers was nine, three as part-time workers, and one as unemployed. While in the control group, eight participants were identified as full-time workers, one participant as a part-time worker, two participants worked as drivers, and three participants were unemployed. Based on age range, six participants in the treatment group and ten in the control group were 17-35 years old. In comparison, nine participants in the treatment group and five in the control group were identified as older than 35 and younger than 60. Based on the educational background, most of the participants of this study had graduated from high school (n=13 for both groups). Two participants had graduated with associate degrees in the treatment group, and two participants graduated with bachelor's degrees in the control group. Table 2 also identifies the substance use for the last thirty days, where most of the participants used the substance one to three times in the last thirty days (n=15 treatment group; n=14 control group) and one participant used the substance more than three times.

**Table 2***Sociodemographic Characteristics of the Participants*

Characteristic	Treatment Group		Control Group	
	<i>n</i>	%	<i>n</i>	%
Gender				
Female	2	86.67	15	100
Male	13	13.37	0	0
Age				
17-35	6	40	10	66.67
36-60	9	60	5	33.33
Occupation	26	52	26	52
Full-time worker	9	60	8	53.3
Part-time worker	2	13.33	1	6.67
Entrepreneur	2	13.33	0	0
Driver	1	6.67	2	13.33
Unemployed	1	6.67	3	20
Other	0	0	1	6.67
Cohabiting	37	74	36	72
Highest educational level				
Highschool	13	86.67	13	86.67
Associate Degree	2	13.33	0	0
Bachelor's degree	0	0	2	13.33
Substance Use				
Alcohol	1	6.67	0	0
Cannabis	2	13.33	2	13.33
Methamphetamine	6	40	10	66.67
Poly-substance use				
Cannabis and alcohol	2	13.33	0	0
Cannabis and Meth	1	6.67	1	6.67
Meth and alcohol	2	13.33	0	0
Cannabis, Meth, Alcohol	0	0	0	0
Cannabis, Heroin, Meth	0	0	2	13.33
Pain killer medication	1	6.67	0	0
Substance Usage in the past 30 days				
One-three times	15	100	14	93.33
More than three times	0	0	1	6.67
Method of Substance Usage				
Oral	2	13.33	0	0
Smoking	13	86.67	14	93.33
Injection	0	0	1	6.67

### Reliability of Measures

The Cronbach's Alpha test was conducted to test the reliability of the two measurements. The resulting  $\alpha$  coefficient of reliability ranges from 0 to 1 in providing this overall assessment of a measure's reliability, indicating how high or low the items have shared covariance and probably measure the same concept.

**Table 3**

*Reliability Statistics of the measures*

Measures	Cronbach's Alpha	N of Items
MAAS pretest	.964	15
MAAS posttest	.944	15
ADCS pretest	.833	5
ADCS posttest	.874	5

Table three shows the reliability coefficient of the MAAS and the ADCS before and after the intervention (pretest and posttest). The questionnaire of MAAS consisted of 15 items and ADCS consisted of five items. The Cronbach's Alpha scores of the MAAS for both pretest and posttest were considered excellent ( $\alpha = .964$  for the pretest and  $\alpha = .944$  for the posttest). The Cronbach's Alpha scores of the ADCS for both pretest and posttest were considered good ( $\alpha = .833$  for the pretest and  $\alpha = .874$  for the posttest).

### Research Question One

To answer research question number one, first, the MAAS score was subjected to a two-way analysis of variance having two levels of groups (treatment group and control group) and two levels of time (pretest and posttest). All effects were statistically significant at the .05 significance level (see table 4 below)

**Table 4***Descriptive Statistics of the MAAS*

Dependent Variable: MAAS

Groups	Times	Mean	Std. Deviation	N
Treatment Group	Pretest	73.60	16.26	15
	Posttest	76.20	12.71	15
	Total	74.90	14.40	30
Control Group	Pretest	74.13	9.42	15
	Posttest	73.26	8.42	15
	Total	73.70	8.79	30
Total	Pretest	73.86	13.06	30
	Posttest	74.73	10.69	30
	Total	74.30	11.84	60

Table four shows the descriptive statistics of the MAAS. The treatment group obtained a slightly lower score on the MAAS than the control group on the pretest. Whereas on the posttest, the treatment group had a higher average score ( $M=76.2$ ,  $SD=12.71$ ) than the control group ( $M=73.26$ ,  $SD=8.42$ ). Thus, it indicates that the participants in the treatment group resulted in a higher average score of MAAS after receiving the TAU plus the additional telehealth mindfulness meditation.

**Table 5***Tests of Between-Subjects Effects*

Dependent Variable: MAAS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Obse Pow
Corrected Model	77.933 <sup>a</sup>	3	25.978	.177	.911	.009	.532	
Intercept	331229.40	1	331229.400	2260.76	.000	.976	2260.768	1
Groups	21.600	1	21.600	.147	.702	.003	.147	
Times	11.267	1	11.267	.077	.783	.001	.077	
Groups * Times	45.067	1	45.067	.308	.581	.005	.308	
Error	8204.667	56	146.512					
Total	339512.00	60						
Corrected Total	8282.600	59						

a. R Squared = .009 (Adjusted R Squared = -.044)

b. Computed using alpha = .05

Table five shows the Tests of Between-Subjects Effects to reveal the interaction between the effects of groups and times and the combination of groups and times on the MAAS average score. A 2x2 ANOVA with groups (treatment and control group) and test times (pretest and posttest) as between-subjects factors revealed the main effect of groups,  $F(1, 56) = .147$ ,  $p = .702$ ,  $\eta^2 = .003$ , and times,  $F(1, 56) = .077$ ,  $p = .783$ ,  $\eta^2 = .001$  on the average score of the MAAS. The table five also shows the main effects by the interaction of groups and times on the average score of the MAAS,  $F(1, 56) = .308$ ,  $p = .581$ ,  $\eta^2 = .005$ .

**Table 6***Descriptive Statistics of the ADCS*

Dependent Variable: ADCS

Groups	Times	Mean	Std.	N
			Deviation	
Treatment Group	Pretest	8.33	4.43	15
	Posttest	5.86	3.92	15
	Total	7.10	4.30	30
Control Group	Pretest	6.60	3.04	15
	Posttest	6.46	3.06	15
	Total	6.53	3.00	30
Total	Pretest	7.46	3.83	30
	Posttest	6.16	3.47	30
	Total	6.81	3.68	60

Table six shows the descriptive statistics of the ADCS. The treatment group obtained a higher score of the ADCS (M=8.33, SD=4.43) than the control group (M=6.6, SD= 3.92) on the pretest. Whereas on the posttest, the treatment group had a lower average score (M=5.86, SD=3.92) than the control group (M= 6.46, SD= 3.06). Thus, it indicates that the participants in the treatment group resulted in a lower average score of ADCS after receiving the TAU plus the additional telehealth mindfulness meditation sessions.

**Table 7***Tests of Between-Subjects Effects*

Dependent Variable: ADCS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Obser Pow
Corrected Model	50.583 <sup>a</sup>	3	16.86	1.255	.299	.063	3.765	
Intercept	2788.017	1	2788.01	207.50	.000	.787	207.508	1
Groups	4.817	1	4.81	.358	.552	.006	.358	
Times	25.350	1	25.35	1.88	.175	.033	1.887	
Groups * Times	20.417	1	20.41	1.52	.223	.026	1.520	
Error	752.400	56	13.43					
Total	3591.000	60						
Corrected Total	802.983	59						

a. R Squared = .063 (Adjusted R Squared = .013)

b. Computed using alpha = .05

Table seven shows the Tests of Between-Subjects Effects to compare ADCS average score differences between participants in two level conditions by groups, treatment and control group, and by time of intervention, pretest and posttest. A 2x2 ANOVA with groups (treatment and control group) and times (pretest and posttest) as between-subjects factors revealed the main effects of groups,  $F(1, 56) = .358$ ,  $p = .552$ ,  $\eta^2 = .006$ , and times,  $F(1, 56) = 1.88$ ,  $p = .175$ ,  $\eta^2 = .033$  on the average score of the ADCS. Table seven also shows the main effect of the interaction between groups and times on the average score of the ADCS,  $F(1, 56) = 1.52$ ,  $p = .223$ ,  $\eta^2 = .026$ .

## Research Question Two

The second research question inquired about the magnitude of the telehealth mindfulness meditation on the substance use craving. To answer this question, the partial eta squared test was conducted to find the effect size of the groups and times on the MAAS and ADCS scores. Eta squared or partial eta squared is a measure of effect size commonly used in ANOVA models. It measures the variance associated with each main effect and the interaction effect (Tabachnick & Fidell, 2001). The effect size of the telehealth mindfulness meditation in reducing substance use craving was considered low (See Tables 5 and 7). The value  $\eta^2 = .006$  of the groups effect indicates that 0.6% of the variance is accounted for by the type of groups, whereas the value  $\eta^2 = .033$  of times account for 3.3%, and the value  $\eta^2 = .026$  of the Groups x Times (G x T) interaction accounts for 2.6%. Thus, it is considered that the study lacked the power to find significant effects of telehealth mindfulness meditation in reducing the substance use craving.



## Chapter V: Conclusion

This study examined the effectiveness of the telehealth mindfulness meditation to reduce the substance use craving of clients with substance use disorders in the outpatient treatment. A randomized controlled study design was conducted to find the effectiveness of telehealth mindfulness meditation as an additional treatment in the outpatient treatment facility in Jakarta, Indonesia. This study involved 30 participants who were divided into two groups, 15 participants in the control group and 15 participants in the treatment group. The independent variables of this study were the two groups (the treatment and the control group) and the two level of test time (pretest and posttest), while the mindfulness and substance use craving were the dependent variables. The participants in the control group of this study received the treatment as usual (TAU) that covers the assessments, eight individual counseling sessions, two group counseling sessions, random urine analysis, and psychoeducation. At the same time, participants in the treatment group received the TAU with the four weekly telehealth mindfulness meditation as an additional program.

To identify the effectiveness of the additional four weekly telehealth mindfulness meditation, this study conducted a 2-two-way ANOVA to examine the interaction between the independent variables on the mindfulness and substance use craving as the dependent variables. The Mindfulness Attention Awareness Scale (MAAS) and the Aggregated Drug Craving Scale (ADCS) were utilized in this study to measure the dependent variables. The additional of the telehealth mindfulness meditation treatment concluded as a more effective treatment if the statistical result showed a significant average score differences of the ADCS and the MAAS before and after receiving the intervention. The partial eta squared test also was calculated to

measure the effect size of both independent variables on the MAAS and ADCS average score changes.

To answer the first research question, this study compared the average score differences of the ADCS scores before and after receiving the treatment in both the treatment group and control group. The comparison of the average score of ADCS between the treatment group and the control group after completing the intervention was equal. There was no difference in average at any level of the independent variables ( $F(1, 56) = .358, p = .552, \eta^2 = .006$  for any group comparison and  $F(1, 56) = 1.88, p = .175, \eta^2 = .033$  for any time comparison). This study also found that the effect of one independent variable does not depend on the effect of the other independent variable, which means no interaction between the treatment and control group and the pretest and posttest in substance use craving reduction ( $F(1, 56) = .308, p = .581, \eta^2 = .005$ ). Even though the treatment group had a lower substance use craving level ( $M = 5.86, SD = 3.92$ ) than the control group ( $M = 6.46, SD = 3.06$ ) after receiving the treatment. Based on the findings, it concluded that the additional four weekly telehealth mindfulness meditation treatment was not proven significantly more effective than the TAU in the clients' substance use craving reduction. The insignificant differences between the control and treatment groups may be affected by outlier factors that were not studied in this research.

Furthermore, this study also measures the effect of the independent variables, groups and times, on the mindfulness level. This study found that the treatment group obtained a higher MAAS score ( $M = 76.20, SD = 12.71$ ) than the control group ( $M = 73.26, SD = 8.42$ ) after receiving the four weekly telehealth mindfulness meditation sessions. However, there was no significant difference on the MAAS score of clients who received the TAU only and clients who received the TAU plus the additional telehealth mindfulness meditation treatment ( $F(1, 56) = .147, p =$

.702,  $\eta^2 = .003$  for between groups variable and  $F(1, 56) = .077$ ,  $p = .783$ ,  $\eta^2 = .001$  for between times variables). This result showed that participants who received four weekly telehealth mindfulness meditation sessions had an equal score to those who did not receive the four weekly telehealth mindfulness meditation sessions. It concluded that the growth of mindfulness score before and after receiving the intervention was not statistically affected by the four weekly telehealth mindfulness meditation sessions. Further, this study also found that the combination of two independent variables did not significantly affect the MAAS scores ( $F(1, 56) = .308$ ,  $p = .581$ ,  $\eta^2 = .005$ ). Thus, the study resulted that the additional four weekly telehealth mindfulness meditation did not significantly increase the mindfulness level.

On the second research question, this study examined the magnitude of the telehealth mindfulness meditation on the substance use craving. The partial eta squared was conducted to estimate the power of the telehealth mindfulness meditation in reducing the substance use craving on both independent variables. The finding demonstrates that the effect size of telehealth mindfulness meditation in reducing substance use craving was low for both group variables ( $\eta^2 = .006$ ) and test time ( $\eta^2 = .033$ ). It indicates that this study lacks sufficient magnitude to provide a significant effect on the substance use craving reduction. The results of this study cannot support the previous study from Bowen & Witkiewitz (2010) that found the practice of mindfulness meditation is incorporated with a lower risk for substance use relapse.

The implication of this study is to provide various treatment modalities that could help the success of substance use disorder treatment. Mindfulness as an evidence-based treatment can be the additional alternative method to increase clients' awareness and emotional regulation related to how clients manage their substance use cravings, if any. The implementation for future research, regarding the limited studies of the telehealth method implementation in substance use

treatment facilities, this study can provide more information about the effectiveness of telehealth-based treatment that escalated by the COVID-19 pandemic around the world. Future research also can specify the study to investigate clients and therapy providers' familiarity and satisfaction with online platforms to reduce the outliers that can affect to the results of the study.

There are some limitations to this study. One of the limitations of this study is the short period of four weekly interventions of the telehealth mindfulness meditation sessions. Four sessions of intervention were considered not to be as effective as a more extended period of intervention in the correlation of substance use craving. Based on a study by Enkema & Bowen (2017), the number of days per week and the number of minutes per day can significantly moderate the relationship between craving and the number of substances used in the following months. This study also does not study the follow-up of substance use craving and mindfulness level three to six months after the treatment was implemented. Future research can add this follow-up to examine if the treatment is effective for months after it has concluded. Further, the number of participants in this study was limited to some categories that cannot be generalized. For example, only two out of thirty participants were female, and all the participants were classified as Indonesian. Thus, the results do not apply to identifying whether the culture and gender of the participants of the program affect the success of online mindfulness meditation in reducing substance use cravings. This study only applied to clients in the outpatient treatment facility that only provides adequate treatment for mild to moderate substance use disorders. Thus, the findings of this study are not relevant to programs that are applied in different settings.

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**Appendix A: Mindful Attention Awareness Scale Questionnaire  
(In Indonesian Language)**

**SKALA MINDFULNESS ATTENTION AWARENESS SCALE (MAAS)**

**Instruksi**

Berikut ini kumpulan pernyataan mengenai pengalaman sehari-hari Anda. Beri penilaian seberapa sering atau jarang Anda mengalami setiap hal, dengan menggunakan skala 1 (hampir selalu) dan 6 (*hampir tidak pernah*). Jawablah berdasarkan pengalaman Anda yang sesungguhnya, bukan berdasarkan yang sepiantasnya Anda alami. Perlakukan tiap butir pernyataan secara terpisah dengan butir lain.

<b>1 Hampir Selalu</b>	<b>2 Sering</b>	<b>3 Agak Sering</b>	<b>4 Agak Jarang</b>	<b>5 Jarang</b>	<b>6 Hampir Tidak Pernah</b>
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Ketika saya mengalami emosi tertentu, saya mengabaikannya selama beberapa waktu.	1	2	3	4	5	6
Karena ceroboh, tidak waspada, atau karena sibuk berpikir tentang hal lain, tanpa sengaja saya merusak barang.	1	2	3	4	5	6
Saya merasa sulit untuk fokus pada kejadian yang tengah berlangsung.	1	2	3	4	5	6
Saya berjalan kaki terlampau cepat tanpa	1	2	3	4	5	6

menghiraukan hal lain yang saya lewati di sepanjang perjalanan.									
Ketika badan saya terasa tidak nyaman, saya mengabaikannya sampai sakitnya menjadi tak tertahankan.				1	2	3	4	5	6
Saya lupa nama orang segera setelah berkenalan.				1	2	3	4	5	6
Saya berperilaku otomatis, tanpa memahami apa yang sedang saya lakukan.				1	2	3	4	5	6
Saya tergesa-gesa dalam beraktivitas, tanpa memperhatikan apa yang sebetulnya tengah saya kerjakan.				1	2	3	4	5	6
Pikiran saya terbawa pada hasil akhir, sehingga saya mengabaikan proses yang tengah saya kerjakan untuk meraihnya.				1	2	3	4	5	6
Saya melakukan pekerjaan secara otomatis, mengabaikan apa yang sedang saya kerjakan.				1	2	3	4	5	6
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>				
<b>Hampir</b>	<b>Sering</b>	<b>Agak</b>	<b>Agak</b>	<b>Jarang</b>	<b>Hampir Tidak Pernah</b>				
<b>Selalu</b>	<b>g</b>	<b>g</b>	<b>g</b>						

Ketika orang lain berbicara, saya hanya menyimak	1	2	3	4	5	6
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karena secara bersamaan saya sibuk melakukan hal lain.						
Saya bepergian tanpa memahami mengapa saya ingin pergi ke tempat tersebut.	1	2	3	4	5	6
Saya merasa terbebani dengan masa depan dan masa lalu.	1	2	3	4	5	6
Saya merasa tidak sepenuhnya fokus dalam mengerjakan segala sesuatu	1	2	3	4	5	6
Ketika saya memakan kudapan (jajanan), saya melakukannya tanpa sadar.	1	2	3	4	5	6

## Mindful Attention Awareness Scale Questionnaire

(In English)

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
almost never	often frequently	somewhat often	somewhat infrequently	often infrequently	almost never

\_\_\_\_\_ 1. I could be experiencing some emotion and not be conscious of it until sometime later.

\_\_\_\_\_ 2. I break or spill things because of carelessness, not paying attention, or thinking of something else.

\_\_\_\_\_ 3. I find it difficult to stay focused on what's happening in the present.

\_\_\_\_\_ 4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.

\_\_\_\_\_ 5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.



- \_\_\_\_\_ 6. I forget a person's name almost as soon as I've been told it for the first time.
- \_\_\_\_\_ 7. It seems I am "running on automatic," without much awareness of what I'm doing.
- \_\_\_\_\_ 8. I rush through activities without being really attentive to them.
- \_\_\_\_\_ 9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.
- \_\_\_\_\_ 10. I do jobs or tasks automatically, without being aware of what I'm doing.
- \_\_\_\_\_ 11. I find myself listening to someone with one ear, doing something else at the same time.
- \_\_\_\_\_ 12. I drive places on 'automatic pilot' and then wonder why I went there.
- \_\_\_\_\_ 13. I find myself preoccupied with the future or the past.
- \_\_\_\_\_ 14. I find myself doing things without paying attention.
- \_\_\_\_\_ 15. I snack without being aware that I'm eating.

**Appendix B: Aggregated Drug Craving Scale (ADCS)**  
**(In Indonesian Language)**

**Petunjuk:** Lingkarilah nomor yang paling sesuai yang menggambarkan kondisi anda pada setiap aitem selama **satu minggu terakhir.**

No	Aitem	Frekuensi/Intensitas/Durasi
1	Seberapa sering anda berpikir untuk menggunakan narkoba atau memikirkan tentang bagaimana menggunakan narkoba akan membuat perasaan anda menjadi baik?	0. Tidak pernah (0 kali per minggu)
		1. Jarang (1-2 kali seminggu)
		2. Situasi tertentu (3-4 kali per minggu)
		3. Kadang-kadang (5-10 kali per minggu)
		4. Sering (11-20 kali per minggu atau 2-3 kali per hari)
		5. Sering sekali (21-40 kali per minggu atau 3-6 kali per hari)
2	Pada keadaan yang paling parah, seberapa kuat dorongan keinginan anda untuk menggunakan narkoba?	0. Tidak sama sekali
		1. Sangat Ringan
		2. Ringan
		3. Sedang
		4. Kuat, tapi dapat dikendalikan
		5. Kuat dan sulit dikendalikan

		6. Sangat kuat, dan akan menggunakan narkoba jika tersedia
3	Berapa total waktu yang Anda habiskan untuk memikirkan tentang bagaimana menggunakan narkoba berpengaruh pada perasaan Anda atau bagaimana menggunakan narkoba membuat perasaan anda menjadi baik?	0. Tidak sama sekali
		1. Kurang dari 20 menit
		2. 21 hingga 45 menit
		3. 46 hingga 90 menit
		4. 90 menit hingga 3 jam
		5. Antara 3 hingga 6 jam
		6. Lebih dari 6 jam
4	Seberapa sulit Anda menolak untuk menggunakan narkoba jika narkoba tersedia di rumah anda?	0. Tidak sulit sama sekali
		1. Hampir tidak sulit sama sekali
		2. Agak sulit
		3. Sedang
		4. Sangat sulit
		5. Sulit yang teramat ekstrim
		6. Tidak mampu menahan
5	Ingatlah jawaban anda pada pertanyaan-pertanyaan sebelumnya, berilah rata-rata	0. Tidak pernah memikirkan narkoba dan tidak pernah memiliki keinginan untuk menggunakan narkoba

tingkatan keinginan Anda untuk menggunakan narkoba selama satu minggu terakhir.	1. Jarang memikirkan narkoba dan jarang memiliki keinginan untuk menggunakan narkoba
	2. Pada saat tertentu memikirkan narkoba dan pada saat tertentu memiliki keinginan untuk menggunakan narkoba
	3. Kadang memikirkan narkoba dan kadang memiliki keinginan untuk menggunakan narkoba
	4. Sering memikirkan narkoba dan sering memiliki keinginan untuk menggunakan narkoba
	5. Sering sekali memikirkan narkoba dan sering sekali memiliki keinginan untuk menggunakan narkoba
	6. Hampir selalu memikirkan narkoba dan hampir selalu memiliki keinginan untuk menggunakan narkoba

**Aggregated Drug Craving Scale (ADCS)**  
**(In English)**

During the past week...	
1. How often did you think about drinking alcohol/using drugs or about how good drinking alcohol/using drugs would make you feel?	<p>0 Never (0 times per week)</p> <p>1 Rarely (1-2 times per week)</p> <p>2 Occasionally (3-4 times per week)</p> <p>3 Sometimes (5-10 times per week)</p> <p>4 Often (11 -20 times per week or 2-3 times per day)</p> <p>5 Most of the time (21-40 times per week or 3-6 times per day)</p> <p>6 Nearly all the time (more than 40 times per week or more than 6 times per day)</p>
2. At its most severe point, how strong was your craving to drink alcohol/use drugs?	<p>0 None at all</p> <p>1 Slight</p> <p>2 Mild</p> <p>3 Moderate</p> <p>4 Strong, but easily controlled</p> <p>5 Strong and difficult to control</p> <p>6 Strong urge and would have drunk alcohol or used drugs if available</p>
3. How much time (in total) did you spend thinking	<p>0 None at all</p> <p>1 Less than 20 minutes</p>

about how drinking alcohol/using drugs or about how good drinking alcohol/using drugs would make you feel?	2 21 to 45 minutes 3 46 to 90 minutes 4 90 minutes to 3 hours 5 Between 3 to 6 hours 6 More than 6 hours
4. How difficult would it have been to resist drinking alcohol/using drugs if you had known alcohol/drugs were in your house?	0 Not difficult at all 1 Very mildly difficult 2 Mildly difficult 3 Moderately difficult 4 Very difficult 5 Extremely difficult 6 Would not be able to resist
5. Keeping in mind your responses to the previous questions, please rate your overall average alcohol/drug craving for the past week.	0 Never thought about alcohol/drugs and never had the urge to drink/use drugs. 1 Rarely thought about alcohol/drugs and rarely had the urge to drink or use drugs. 2 Occasionally thought about alcohol/drugs and occasionally had the urge to drink or use drugs. 3 Sometimes thought about alcohol/drugs and sometimes had the urge to drink or use drugs. 4 Often thought about alcohol/drugs and often thought about having a drink or use drugs.

5 Thought about alcohol/drugs most of the time and had the urge to drink or use drugs most of the time.

6 Thought about alcohol/drugs nearly all of the time and had the urge to drink or use drugs nearly all of the time.

**Appendix C: Demographic Questionnaire**

3. Nama Lengkap
4. Email
5. Berapa usia Anda saat ini?
6. Jenis Kelamin
  - a. Perempuan
  - b. Laki-laki
7. Status Pekerjaan
  - a. Bekerja paruh waktu
  - b. Bekerja full time
  - c. Tidak bekerja
  - d. Pelajar
  - e. Lainnya:
8. Background Pendidikan terakhir
  - a. Lulus SD
  - b. Lulus SMP
  - c. Lulus SMA
  - d. Lulus Sarjana S1
  - e. Lulus Sarjana S2 dan/atau S3
  - f. Lainnya;
9. Histori pemakaian narkoba (boleh pilih lebih dari 1)
  - a. Ganja
  - b. Heroin
  - c. Shabu
  - d. Benzodizepine atau obat penenang
  - e. Ecstasy
  - f. Alcohol
  - g. LSD
  - h. Lainnya:
10. Berapa jumlah rawat inap atau rawat jalan termasuk detoks (treatment narkoba) yang telah Anda lakukan?
  - a. 1-3 kali
  - b. 4-6 kali
  - c. Belum pernah sama sekali
  - d. Lebih dari 6 kali
    - a. Kapan pertama kali Anda pakai narkoba? (contoh: ketika usia 17 tahun)



- b. Apakah Anda pernah mendengar atau mempelajari tentang teknik mindfulness sebelumnya?
- c. Bagaimana Anda menggunakan / mengkonsumsi zat narkoba?
  - a. Hisap melalui mulut
  - b. Oral (minum, telan)
  - c. Snort (lewat hidung)
  - d. Suntik
  - e. Di hirup / inhalan
  - f. lainnya
    - d. Berapa jumlah pemakaian narkoba dalam 30 terakhir?
      - a. 1-3 kali
      - b. 4-6 kali
      - c. 7-10 kali
      - d. Lebih dari 10 kali
      - e. Tidak sama sekali

## Appendix D: Institutional Review Board Approval



Institutional Review Board  
720 Fourth Avenue South, AS 101, St. Cloud, MN 56301-4498

April 19, 2022

To: Dewi Qisti  
Email: [dewi.qisti@stcloudstate.edu](mailto:dewi.qisti@stcloudstate.edu)

Faculty Mentor: Amy Knopf  
[ahknopf@stcloudstate.edu](mailto:ahknopf@stcloudstate.edu)

**Project Title: The Effectiveness of Telehealth Mindfulness Meditation in Reducing Substance Use Craving**

The Institutional Review Board has reviewed your protocol to conduct research involving human subjects.

**Your project has been: Approved**

**Expiration Date:** April 18, 2023  
**Approval Type:** Expedited 2  
**SCSU IRB#:** 36168673

Please read through the following important information concerning IRB projects:

**ALL PROJECTS:**

- The principal investigator assumes the responsibilities for the protection of participants in this project. Any adverse events must be reported to the IRB as soon as possible (ex. research related injuries, harmful outcomes, significant withdrawal of subject population, etc.).
- The principal investigator must seek approval for any changes to the study (ex. research design, consent process, survey/interview instruments, funding source, etc.). The IRB reserves the right to review the research at any time

**EXEMPT PROJECTS:**

- Exempt review only requires the submission of a Continuing Review/Final Report form in advance of the expiration date indicated in this letter if an extension of time is needed.

**EXPEDITED AND FULL BOARD REVIEW PROJECTS:**

- The principal investigator must submit a Continuing Review/Final Report form in advance of the expiration date indicated on this letter to report conclusion of the research or request an extension.
- Approved consent forms display the official IRB stamp which documents approval and expiration dates. If a renewal is requested and approved, new consent forms will be officially stamped and reflect the new approval and expiration dates.

If we can be of further assistance, feel free to contact the IRB at 320-308-4932 or email [ResearchNow@stcloudstate.edu](mailto:ResearchNow@stcloudstate.edu) and please reference the SCSU IRB number when corresponding.

Sincerely,  
**IRB Chair:**  
Dr. Mili Mathew  
Chair and Graduate Director  
Assistant Professor  
Communication Sciences and Disorders

**IRB Institutional Official:**  
Dr. Claudia Tomany  
Associate Provost for Research  
Dean of Graduate Studies