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Effect of Cyclic Meditation in Substance Abusers in Rehabilitation Center

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Abstract

Objectives: To explore the potential impact of cyclic meditation in relieving depression symptoms in Substance abusers.

Materials and methods: 16 substance abusers aged 18-50 years were given the intervention of Cyclic Meditation for 10 days. All Participants were assessed, before and after the intervention for Depression using Beck's Depression Inventory. The blood pressure and pulse rate were recorded as well. The data was analyzed using Jamovi software.

Results: Significant improvement was seen in the test in psychological variable BDI while there was no significant change in physiological change in Pulse rate and blood pressure.

Conclusion: We can interpret that Cyclic mediation is beneficial for reducing in symptoms of depression in those who have problem of substance abuse.

Keywords: Substance Abusers, Cyclic Meditation, Yoga, Addiction, Depression, Substance use disorder (SUD).

Introduction

Addiction is a prevalent issue nowadays, whether it's any drugs, smartphones or social media. It is a very complicated, treatable disorder that affects behavior as well as brain function, which means there is no best approach to treat it. [1] behavior is the compulsive and repeated use of a specific action despite its negative or harmful effects on one's wellbeing, which can include problems with one's relationships, finances, physical health, and academic performance. It can lead to severe health complications and increased mortality. In one of the study, the CDC reports that there were approximately 70,630 drug overdose deaths in the US in 2019. [2]. Addiction risk is increased in people with mental health conditions such depression, anxiety, Post Traumatic Stress Disorder (PTSD), and attention deficit hyperactivity disorder (ADHD). People with high stress levels, traumatic experiences, and unfavorable childhood events also turn to these negative addictive behaviors as coping mechanisms for such incidents.[3]. Stress plays a significant part in the processes leading to addiction, according to several of the main theories of addiction. These include psychological models of addiction that observe drug use and abuse as a coping mechanism to manage stress, ease tension, and self-medicate, as well as the essential elements

in the shift from periodic substance use to the inability to quit chronic use despite negative effects, which is a key component of addiction. [4–6]

Initially, the user experiments with easily accessible substances that are widely used, then inappropriate and excessive dosages of substances became abusive. Ultimately substance use disorders (SUD) occur, where chronic drug use results in dependence on these substances. This is known as addiction. Many substances, such as alcohol and tobacco, may be legal, while others, like heroin and cocaine, are declared illegal. These substances can be arrayed into seven classes based on their pharmacological and behavioral effects. Nicotine, (cigarettes, vapor-cigarettes, cigars, chewing tobacco); Alcohol (including all forms of beer, wine, and distilled liquors); Cannabinoids (Marijuana/hashish, hash oil, and edible cannabinoids); Opioids (Heroin, methadone, buprenorphine, Oxycodone); Depressants (e.g., Valium, Librium, and Xanax); Stimulants (Cocaine, amphetamine, methamphetamine, methylphenidate); and Hallucinogens (LSD- lysergic acid diethylamide, mescaline, and MDMA- 4-methylenedioxy-N-methamphetamine (e.g., Ecstasy) [7]. In 2020, approximately 40.3 million individuals reported having an SUD diagnosis based on the DSM-5 (Statistical Manual of Mental Disorders, Fifth Edition) criteria. The magnitude of substance usage in India is as follows, per the recently released study on the "National Survey on Extent and Pattern of Substance Use in India" (2019) by the Ministry of Social Justice and Empowerment: Of the 16-crore people (14.6% of those between the ages of 10 and 75), 5.2% are alcohol dependent and are current alcohol users. Approximately 3.1 crore people (2.8%) use cannabis, and 72 lakh persons (0.66%) have cannabis-related problems. Among all opioid users, 2.06% require treatment services, and almost 0.55% (60 lakh) need health care. [8]

The National Crime Record Bureau (NCBR) reported that as many as 10,560 drug and alcohol addiction related suicides occurred in India in 2021. Substance abuse is associated with a range of physical related complications such as changes in appetite, weight, decline in physical appearance and, disrupted sleep patterns. On the behavioral front, increased irritability or aggression, laziness, hyperactivity, and decreased productivity at work is observed in substance abusers. Psychologically, SUD can lead to severe mood swings, significant personality shifts, episodes of acute fatigue, delusional thinking, panic attacks, anxiety, depression, paranoia, delusions, hallucinations and lack of motivation. These psychological states have even been shown to drive individuals to commit suicide. [9 10 11 12]

The statistics highlight the severity of the issue of drug use and its symptoms, along with the increasing global prevalence, emphasizes the immediate need for effective measures and treatments. Substance abuse has become known as a complex illness that requires an integrative approach of treatment. Examples of evidence-based treatments include behavioral therapy, pharmaceutical therapy, and psychotherapy. Pharmacological interventions include the use of opioid agonist and nicotine replacement therapies. Other helpful techniques are contingency management, motivational interviewing (MI), and cognitive behavioral treatment (CBT). Effective therapies are created to meet the specific requirements, preferences, and circumstances of each patient. To maximize positive outcomes, these treatment strategies often incorporate counseling, and social support services. However, there are helpful alternative therapies that promote holistic healing and have shown promise in improving well-being and reducing addictive behaviors. Studies suggests that yoga might benefit people with substance use difficulties in the short term by reducing anxiety,

improving self-esteem, and improving their quality of life [912]

Yoga relaxation techniques reduce the body and mind responses to stress. Dr. H.R. Nagendra developed a relaxation technique known as Cyclic Meditation (CM), in which the mind is alternately stimulated and relaxed through a combination of asana and guided relaxation. It is believed that the ancient Indian scripture Mandukya Upanishad is where the concept of cyclic meditation first originated [13]. The basis of cyclic meditation is that an individual in a regular state of mind is located equally between being hyperactive and passive, and that an appropriate approach would be one that integrates both calming and alerting techniques to achieve a state of mental equilibrium. After praying, practitioners of CM perform isometric muscle, contraction, supine rest, standing comfortably, centering by distributing body weight across the various foot parts, forward bending (Ardhakatichakrasana), and supine rest. The emphasis of the practice is on awareness and relaxation. Numerous advantages for both physical and mental health has been documented by scientific research on the impacts of practicing CM [14,15].

Previous research has shown that Yoga practices, including cyclic meditation, can have beneficial effects on mental health, stress reduction, and impulse control. [1617] Conducting scientific studies on alternative therapies like cyclic meditation contributes to evidence-based practice in the field of addiction treatment. [9 18 19] The purpose of this study is to observe the potential benefits of Cyclic Meditation in a population of Substance abusers admitted to a rehabilitation center.

2. Materials and methods:

2.1 Study Participants:

A total of 16 male subjects with an age between 18 to 50 years participated in the study, in which 2 opted out due to health issues. The subjects recruited for the study were from Future Lights Trust, Rehabilition center, Bengaluru. Participants were newly admitted to the center and had not yet started the formal rehabilitation program.

2.2 Inclusion criteria

Both genders were included with age range of 18–50 years, and all individuals admitted to the centre were included.

2.3 Exclusion

Subjects with medical conditions like cardiovascular disease (e.g., heart failure, ischemia), cancer, chronic obstructive pulmonary disease requiring supplemental oxygen, and uncontrolled hypertension were excluded from the study.

2.4 Design

One group pre-post design. The intervention duration was for 10 days. On day 1, Beck Depression Inventory (BDI) Questionnaire, blood pressure and pulse rates were recorded. The blood pressure and pulse rate were recoded using a sphygmomanometer and pulse oximeter respectively. The intervention comprised Cyclic Meditation (CM) for 40 minutes. On the 11th day, post data was extracted using the BDI questionnaires, blood pressure and pulse rate.

2.5 Assessments

Beck's Depression Inventory; The Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is the most well-researched depression self-report inventory with older adults. This 21-item multiple-choice assessment uses the Guttman scaling method for assessing an adult's depression. (García-Batista et al., 2018)

2.5 Intervention

The intervention started with Starting with the prayer which is mentioned in Mandukya Upanishad, the invocation sets a peaceful and focused atmosphere for the practice of cyclic meditation, fostering a sense of spiritual connection and tranquility. (Nagendra H.R. & Nagarathna R., 2010).The entire intervention was given for 10 days. The pre and post data was taken on first and the last day of the

intervention using Becks' Depression Inventory (BDI).

Result

Data were entered into an Excel sheet and further analysis was done using Jamovi software. Data was checked for normal distribution using the Shapiro-Wilk test for normality. If the p-value of the Shapiro Wilk test was >0.05, data was normally distributed and appropriate parametric tests were used. If the data was not normally distributed (p-value of Shapiro Wilk = <0.05), appropriate non-parametric tests were used.

The data were analyzed for normally distribution by Shapiro wilk test, which shown results of BDI, diastolic blood pressure, pulse rate scores were followed a normal distribution, which is further analyzed parametric test. The systolic blood pressure variable was analyzed using non-parametric tests.

Table 1

VARIABLES	GROUP			
	PRE	POST	% OF MEAN	P VALUE
BDI	17.3 ±12.7	8.93 ±9.95	- 50.115	0.036
PULSE RATE	71.7 ±8.36	71.4 ±4.47	-0.415	0.908
BP-SYSTOLE	117 ±12.3	115 ±12.6	-1.709	0.326
BP-DIASTOLE	81.3 ±11.4	83.5 ±8.53	+2.70	0.257

Discussion

The present study aimed to evaluate the effect of cyclic meditation on substance abusers who experience depressive symptoms and physical withdrawal symptoms in a rehabilitation center. Our findings revealed that participants practicing cyclic meditation for 10 days exhibited significant reductions in depressive symptoms however there was no significant change observed in physiological parameters. These results suggest that while cyclic meditation might be helpful in enhancing psychological well-being (particularly in lowering symptoms of depression), it might not have a significant impact on pulse rate and blood pressure in this specific group. Some researcher have already observed that cyclic meditation is effective in reducing withdrawal symptoms, balance and gait, quality of sleep, and quality of life in alcohol dependent individuals.Considering the significant improvement in depressive symptoms, cyclic meditation may prove to be an effective alternative or adjunct in the management of substance abuse. [19]

The inclusion of yoga as a complementary treatment for substance use disorder is supported by its multifaceted approach to improving mental and physical health. By incorporating breathing techniques, physical postures, relaxation, and meditation, yoga offers a holistic method to support recovery and enhance overall well-being. Further research into the

specific mechanisms of yoga's effects on addiction and mental health will help to deepen our understanding and refine these practices for therapeutic use. ([21]

HR Nagendra report that Yoga poses are considered "awakening" practices in Cyclic Meditation, whereas resting in a supine position is considered a "calming practice." A vital component of CM practice is awareness of body sensations as they arise [17]. This lends credence to the hypothesis that, during CM, a mix of soothing and stimulating techniques applied against a background of awareness and relaxation may lessen psychophysiological arousal more than resting in a supine position for an equivalent amount of time. According to a study, practicing cyclic meditation reduces autonomic arousal, improves attention, and enhances the quality of sleep. Asanas, or yoga postures, are a part of CM practice and involve stretching the muscles, which offers a number of health advantages. [19].

Another researcher found in his study on yoga's impact on the nerve system's autonomic functions, stated that "practicing cyclic meditation changes sympathetic activity into parasympathetic activity". The sympathetic nervous system was less active during guided relaxation and Dhyana (meditation), indicating a change in autonomic balance toward vagal dominance [22].

The present study has several key strengths. It is one of the first to explore the impact of cyclic meditation on substance abusers, addressing a significant gap in the research. The use of a well-known and accessible questionnaire ensures reliable data collection. These strengths suggest that cyclic meditation could be a valuable addition to rehabilitation programs, offering holistic benefits to those in recovery.

Conclusion, limitation and Recommendations

This study shows that cyclic meditation is beneficial for reducing symptoms of depression in those who have problems with substance abuse. While there were no significant changes observed in physiological parameters like blood pressure and pulse rate, the positive impact on psychological health is very promising and encourages for varied studies with different variables. Further research with a more diverse and a larger sample size is required to understand the benefits and limitations of cyclic meditation with bio-markers that would help in understanding the comprehensiveness of the practice on overall well-being in participants.

The limitation of the study is that was done on only on 14 subjects where, larger sample should have been used and there was no randomization. Future research should involve comprehensive and objective health measures in the form of bio-markers and brain scans. Other measures like sleep quality and overall well-being should also be included. Larger and more diverse samples should be used to generalize findings and follow-up assessments to be recommended to determine the sustainability of psychological benefits and delayed physical health effects.

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