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# Study of the Effects of Lucid Dreaming, Yoga, and Mindfulness as Treatment for Schizophrenia

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## Abstract

The purpose of this research is to explore the relationship between Schizophrenia Spectrum Disorder and methods of treatment like lucid dreaming, yoga, and mindfulness. There are several methods for treating schizophrenic patients, and these are not always regarded as traditional methods. Millions of people in the United States alone suffer from this mental disorder, and it is extremely important to find the most effective and least obtrusive ways to treat it. Previous research supports the theory that lucid dreaming, yoga, and mindfulness could potentially act as forms of treatment for schizophrenia. In this study, these nontraditional methods are compared with pharmaceutical treatment to explore the relationship between cognitive function, positive and negative symptoms, and overall efficacy.

## Introduction

Schizophrenia is a prolonged brain disorder that impacts millions of people around the world. The American Psychiatric Association describes schizophrenia as a "...chronic brain disorder that affects less than one percent of the U.S. population" [1]. While rare, one percent of the population is still a sizable proportion. In the United States, there is a population of over 330 million. This means that up to 3,300,000 people in the United States alone may suffer from this disorder. Some of the symptoms that a person might experience include psychosis, hallucinations, lack of concentration, etc. When schizophrenia is active, patients may have episodes where they are unable to distinguish between fantasy and reality. The symptoms usually appear around late teens or early 20s. While there is not a cure for this disorder, there are many treatments that attempt to help people live as close to normal lives as possible.

In order to understand schizophrenia, experts have studied genetics, looked at brain structure, and conducted research. As a result, some of the most common forms of treatment include therapy, support groups, and rehabilitation. Therapy and support groups often help people with social skills, stress, identifying signs

of relapse, and keeping periods of remission as long as possible. Rehabilitation centers are used for completing educational programs, holding jobs, and assisting with the development of life management skills. Krishna R. [2]'s study, "Schizophrenia: Overview and Treatment Symptoms," explained that the goal of treatment is to target symptoms, prevent relapse, and help patients integrate in society by increasing adaptive functioning. This is often done with a combination of pharmacological and nonpharmacological treatments. Pharmacological treatments, or medications, are important for managing schizophrenia; however, symptoms may still persist without nonpharmacological treatment. Nonpharmacologic treatment refers to intervention without medication and includes psychotherapy. Common psychotherapeutic approaches are individual, group, and cognitive behavioral. This is a changing field as information becomes relevant. Therapies like metacognitive training, narrative therapies, and mindfulness therapy can be used as an addition to medications. Something that is often discussed in psychotherapies is the importance of medications and keeping patients and families informed about taking them regularly.



## Yoga

As is the case with most mental disorders, the symptoms of schizophrenia vary for each individual. According to “Yoga Therapy for Schizophrenia” by [3], the symptoms of schizophrenia can be classified into positive (delusions and hallucinations), negative (lack of motivation, lack of pleasure, poor insight, and emotional blunting), and sometimes reduced cognition. A large portion of those with schizophrenia do not experience relief from symptoms by medication alone. The article explains that positive symptoms may respond to drugs well, but negative and cognitive symptoms might fail to respond or worsen (2012). Patients may need additional treatments in order to address those symptoms, which is why yoga has been proposed. As explained in “Yoga Therapy for Schizophrenia”, there are several concerns with traditional pharmacological treatments that they believe that yoga could combat. There are many concerns that drugs often lead to unsatisfactory results, obesity, and endocrinological and menstrual dysfunction. Yoga has been suggested as a viable form of treatment because it could combat obesity and metabolic syndrome, improve cognition, and correct menstrual and endocrine dysfunctions. After exploring several studies, they say that yoga packages for patients with psychosis were developed based on the Panchakosha model that included certain asanas and pranayama/breathing patterns without meditation. Although they observed many preliminary studies, all indicated that yogasana packages could significantly decrease negative symptoms of schizophrenia. In studies where yoga groups were compared to exercise groups, the yoga group seemed to obtain more benefits. In a study that measured psychopathology with PANSS and quality of life with WHOQOL-BREF, those who performed yoga therapy had improvements in both scores over the course of the studies. In one study by Gangadhar et al., a yoga group was compared to both an exercise and waitlist group for a 4-month study. It was shown that yogasana significantly reduced negative syndrome scores as well as the ability to recognize facial emotions (measured with the Tool for Recognition of Emotions in Neuropsychiatric Disorders). The same study offered the waitlist group a 1-month training of yoga at the end of the study, and it was discovered that the therapy improved negative syndrome effects. This suggests that the improvements were not caused by the passage of time [3]. Although more research must be dedicated to yoga as a treatment for schizophrenia, the results have been promising so far. It is important that this research is extended into large-scale studies to determine the efficacy and safety of this treatment method.

Since studies have indicated that quality of life and negative symptoms can improve with yoga, it is important to have a biological understanding of this relationship. It is hypothesized that the reason for this improvement could be related to oxytocin. According to [4], there is strong evidence that oxytocin can enhance social cognition, so it has been proposed that it could treat schizophrenia and other psychiatric disorders. Oxytocin regulates central dopamine, and Feifel (as well as other preliminary studies)

has found antipsychotic-like effects in animal models that seem to attribute to oxytocin (2011). As oxytocin releases during yoga, this could lead to the feeling of well-being, which might explain why negative symptoms improved in many schizophrenic patients. Bangalore & Varambally say that one study of yoga tested blood samples before and after the yoga or waitlist period. It was found that oxytocin levels rose nearly threefold in those who learned yoga while the waitlist group did not experience change, supporting the idea that oxytocin is elevated through yoga (2012). This could explain why schizophrenic patients experience benefits in social cognition and wellbeing through yoga.

## Mindfulness

Along with yoga as a treatment for schizophrenia, mindfulness has also been proposed as a possible treatment. Mindfulness-based intervention has been successful for mental illnesses like depression and anxiety, so it has been suggested that MBI could apply to psychotic disorders to relieve some of the anxiety associated with them. According to [5], mindfulness involves focusing one's own attention on their present experiences with acceptance and without judgement (2016). Mindfulness can improve one's ability to control their emotions and thoughts constructively. The article by Lam and Chein explains that MBI could help schizophrenic patients “...relate differently to their psychotic experiences by opening their awareness and non-judgmental acceptance and allow a more adaptive strategy of coping and control over those psychotic symptoms...” (2016). Although a few studies have indicated that it could be harmful for patients to allow psychotic symptoms without negative reactions, there is growing evidence that suggests that MBI might empower patients with self-regulation and management of their illness. Lam and Chein observed six studies that found that there might be therapeutic effects of MBI for patients with recent-onset or chronic schizophrenia. The studies showed that this method might give patients more insight into their illness, how they function, and the control of their symptoms (2016). Although this treatment could potentially be successful for treating negative symptoms of schizophrenia, more research is vital. There has been very little research conducted on MBI's efficacy for schizophrenia, and most studies have been small with little follow-up. Before conclusions and recommendations are made about this method of intervention, there should be a standardization of protocol for treatment and more studies with randomized controls and long-term follow-up.

## Lucid Dreaming as a Treatment Method

There have been few studies discussing the link between schizophrenia and lucid dreaming as a possible treatment; however, there have been several that have examined lucid dreaming for treating psychosis, which is a symptom of schizophrenia. For example, the scholarly study by Rosaline [6], “Lucid Dreaming as Possible Therapy for Psychosis,” investigated whether lucid dreaming can be used as a therapy for psychosis. She explained that lucid dreaming is a state of consciousness where

individuals are aware that they are dreaming and can possibly control their dreams. She said that awareness in the external world is a lack of psychosis. Lucid dreaming is something that can be taught, so they conducted this study to learn about consciousness. De Vetten explained that psychotic episodes involve lower functioning in the prefrontal cortex, and during lucid dreaming, activity increases in this part of the brain. It has been proposed that the increased activity in this portion of the brain could potentially work as a form of therapy for psychotic patients. She cites a study by Mota and other researchers who explored the amount of times psychotic patients reported lucid dreams and how much control they claimed to have compared to healthy subjects. 28 healthy participants and 45 psychotic patients were observed, and it was reported that psychotic patients did not lucid dream less than healthy participants. From those who reported lucid dreaming, psychotic patients reported more control of their dreams. Non-psychotic participants who were able to lucid dream showed more control of their internal reality. De Vetten concluded the study to say that a possible explanation is that psychosis enhances the experience of internal reality. It could be that lucid dreamers with psychotic symptoms can better control their internal reality.

While there are limited studies discussing schizophrenia and lucid dreaming specifically, there are studies that discuss the relationship between dreams and schizophrenia. For instance, the study, "Successful Treatment of Nightmares May Reduce Psychotic Symptoms in Schizophrenia" said: "Nightmares occur more frequently in patients with schizophrenia than they do in the general population. Nightmares are profoundly distressing and may exacerbate daytime psychotic symptoms and undermine day-to-day function" [7]. Seeman explained that about 10% of people with a schizophrenia diagnosis report frequent nightmares. Frequency is important, but the distress of the nightmares is what effects function and psychopathology. The nightmares make restorative sleep more difficult and the distress often carries into the next day. Nightmares are not often discussed in therapy. Seeman explains that addressing nightmares is important for schizophrenia because they can be early warning signs of psychotic illness, and they often signal delusional severity and cognitive decline. Lucid dreaming is listed in this study as a treatment that can help with nightmares because the fronto-parietal regions of the brain are involved in both lucid dreaming and psychosis. Patients with psychosis even claim that the better they sleep the less they suffer from psychotic symptoms during the day (and vice versa); however, the treatment of sleep problems is still limited. Seeman wrote another study discussing the link between schizophrenia and dreaming called "Sleep, Nightmares, and Schizophrenia." She explained that in the field of sleep there is a general agreement that dream life and everyday life are intertwined. Events and emotions experienced during the day often enter dreams and the tone of dreams can also impact one's mood during the day. There are many concerns about the reliability of dream content analysis, but there is consensus that pleasant dreams tend to occur when a person is feeling well, and

bad dreams tend to happen during times when a person is upset.

Another study that discusses schizophrenia and dreaming is "What Links Schizophrenia and Dreaming? Common Phenomenological and Neurobiological Features of Schizophrenia and REM Sleep" by Dagna [8]. This study reviewed the current findings of associations between schizophrenia and REM sleep. Many experts revealed that the two-share common phenomenological and neurobiological features. These commonalities suggest that data about REM could potentially be useful in presenting an experimental model of schizophrenia. Skrzypińska and Szmigielska explain that "dopamine, acetylcholine, noradrenaline, serotonin, and glutamate" are all similarly activated during both REM sleep and active schizophrenia. Experimental data has revealed that patients suffering from schizophrenia had a "similar degree of formal cognitive bizarreness as dream narratives obtained from both non-clinical and clinical populations" [8]. Regarding neurobiological features, REM stage and schizophrenia both have a lack of "central inhibitory processes, intracerebral disconnections, disfunction of the dorso-lateral prefrontal cortex or nucleus accumbens and disturbed responsiveness" (Skrzypińska and Szmigielska). There are many similarities between schizophrenia and the REM sleep stage in both neurobiological and phenomenological features. This study showed that because of the many connections between psychosis and the REM sleep stage, there is a direction that can be taken for more research to understand mental illness and dreaming. When examining these sources, it is clear that there should be more research and studies conducted regarding the link between schizophrenia and lucid dreaming [9].

## Conclusion

This study aimed to explore treatment methods like yoga, mindfulness, and lucid dreaming for those who experience schizophrenia and psychosis. The goal was to explore these treatments alone and in combination with pharmacological treatments to understand their potential effectiveness. Medications have been used as a treatment for those with the condition for decades, but the goal is to uncover a more effective and less harmful treatment by studying yoga, mindfulness, and/or lucid dreaming.

Schizophrenia is considered to be a fairly rare disorder, but it still afflicts millions in the United States alone. Some symptoms of this illness are intense and can debilitating, so it is important that those in the mental health profession seek to find the most effective and least harmful treatment methods. While pharmacological treatments are helpful for managing symptoms, they do not seem to fully alleviate symptoms for most who struggle with the disorder. Therapies like yoga, MBI, and lucid dreaming could potentially aid those with schizophrenia to a greater sense of wellbeing.

There are several limitations to the current research that has been provided for these treatment modalities. When considering yoga as a treatment, a lot of participants with schizophrenia are not suitable or are unwilling to participate in a long-term study.

Bangalore and Varambally explain that nearly one-thousand patients were screened for one study, but only 392 were suitable and 223 of those could not participate (2012). This could greatly impact the results of the study because it does not examine if yoga could be beneficial for all patients. Many of those who were suitable but did not participate simply refused to. It would be helpful to understand if distance from treatment, length of study, and accessibility played large roles in the results of this study. If so, those effects could be counteracted by offering in-home lessons or providing yoga therapies inside of mental facilities. Since research on yoga, mindfulness, and lucid dreaming are limited, meta-analyses could not have been conducted to examine the effects of treatments. While the examined experimental studies have been peer-reviewed, the lack of information limits generalizability and validity of the current findings. So far, research on these treatment modalities is mostly preliminary. It is important that further research is conducted to understand the treatment effects on patients, the long-term benefits of treatments (potential relapse), and that high-quality, easily replicable studies with large sample sizes are used to increase validity. Schizophrenia can be a very disruptive mental illness. For the sake of individuals suffering with these symptoms, it is imperative that researchers find the safest and most effective treatment for the millions struggling with it.

### Acknowledgement

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### Conflict of Interests

No conflict of interests.

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