

Original research article

## IMPACT OF YOGA ON STRESS LEVEL DURING COVID-19

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### Abstract

**Background:** Globally, the COVID-19 epidemic has raised tension, worry, and depression, increasing worries about mental health difficulties. Fear, disease perception, beliefs, and physical and mental health condition all have an impact on mental health decline. Through asanas, pranayama, and satsang, yoga, a non-pharmaceutical treatment, can improve physical and mental wellbeing. Yoga improves psychological well-being by regulating cytokine levels and modulating immunological responses under stress. It helps to stabilise the psycho-physiological process, helping the body and mind to retain or restore balance in the face of disruptive events such as stress. Yoga develops innate inner qualities such as immunity and homeostatic balance.

**Objective:** This study examines the impact of yoga on mental well-being among the general population during the COVID19 epidemic.

**Methodology:** The study was conducted under the guidance of Department of Physiology at the Rajasthan, India. The study survey was carried out for a month from 1-31 July 2023. A total 100 females were enrolled for the study. All subject divided into two groups equally. The group A consists 50 females who were practicing Yoga sessions for many years and who continued this practice during the COVID-19 pandemic thrice a week. The group B consists 50 females who were non-Yoga practitioners.

**Result:** According to study results, yoga practitioners had a statistically substantially reduced average severity of stress symptoms than non-yoga practitioners on 5 of the 6 stress markers. Yoga practitioners had lower levels of anxiety (0.60) and depression (0.53) than non-yoga practitioners (0.89 and 0.85, respectively). Because all values are

statistically significant, the results imply that the study hypothesis should be accepted.

**Conclusion:** Overall, this study reveals that yoga effectively alleviates stress, anxiety, and sadness during COVID-19 lockdown, suggesting it as a potential supplemental therapy and a potential tool for health practitioners to support yoga-based therapies in managing mental health issues related to COVID-19.

**Keywords:** Yoga, COVID-19, anxiety, depression

## 1. Introduction

Coronavirus disease 2019 (COVID-19) is an extremely contagious viral infection triggered by the coronavirus of severe acute respiratory syndrome (SARS-CoV-2). COVID-19 has had a terrible impact on the world, killing almost 6 million people. SARS-CoV-2 spread fast after the first instances of this mostly respiratory viral infection were identified in late December 2019 in Wuhan, Hubei Province, China. The World Health Organization (WHO) was forced to mark it a worldwide pandemic on March 11, 2020 <sup>[1]</sup>. COVID-19 patients typically present common symptoms such as fever, cough, and fatigue, with fever being the most prevalent. Other less characteristic symptoms include headache, diarrhea, abdominal pain, vomiting, chest pain, rhinorrhea, or pharyngalgia. Approximately 90% of patients present more than one symptom. Early onset of shortness of breath is a poor prognostic factor. In Wuhan, respiratory failure was the most common cause of death, followed by septic shock, multiple organ failure and cardiac arrest <sup>[2]</sup>.

The pandemic has led to a global increase in stress, anxiety, and depression, raising concerns about the potential for a widespread increase in mental health issues. A variety of variables impact mental health deterioration, including fear of COVID-19, sickness perception, beliefs, and physical and mental health state <sup>[3]</sup>. People form mental images of illnesses depending on their risk, etiology, duration, and effects. Beliefs also influence concepts of control and cure. These views influence stress reactions and coping processes, which in turn influence wellbeing. Healthy people have less cognitive and emotional memories of the condition. The sort of treatment and preventative measures used also contribute to sickness coherence and the impression of personal control over the condition <sup>[4]</sup>.

Yoga is a non-pharmaceutical treatment for pandemic diseases such as menopause, obesity, diabetes, hypertension, and heart disease. Through asanas, pranayama, pratyahara, Dharana, dhyana and Samadhi, it enhances physical and mental wellness. Spiritual pursuits like as satsang and community service can help to relieve stress <sup>[5]</sup>. Stress significantly impacts physical and mental health by stimulating the immune response through various neurotransmitters, neuropeptides, hormones, and cytokines. Excessive stress can alter immune cell numbers and cytokine dysregulation. Yoga practice has been shown to reduce stress's psychological and physiological effects on various diseases by regulating cytokine levels, which control immune responses during stress. They are beneficial to psychological well-being. A large body of research evidence supports the role of yoga and meditation in combating psychopathy and improving mental health <sup>[6]</sup>.

Yoga stabilizes the psycho-physiological process, which allows the body and mind to retain or rapidly restore their equilibrium in the face of such disruptive factors as stress. COVID-19. Yoga may help you become mentally strong and physically fit. Physically

healthy enough to resist illness. Yoga cultivates the inner inherent powers of the body and mind, such as immunity to combat sickness and homeostasis balance <sup>[7]</sup>.

Research on yoga's effectiveness as a mental health therapy during COVID-19 is needed. This study examines the impact of yoga on mental well-being among the general population during the COVID19 epidemic. Previous studies have shown that wellbeing positively correlates with resilience <sup>[8]</sup>. Further empirical investigation is needed to provide evidence for yoga's effectiveness in managing stress-related problems.

## **2. Material and Methods**

**Study Design:** The study was conducted under the guidance of Department of Physiology at the Rajasthan, India. The study survey was carried out for a month from 1-31 July 2023.

**Sample Size:** A total 100 females were enrolled for the study. All subject divided into two groups equally. The group A consist 50 females who were practicing Yoga sessions for many years and who continued this practice during the COVID-19 pandemic thrice a week. The group B consist 50 females who were non-Yoga practitioners. Study subjects were recruited directly through a Google form link that included a demographic information sheet and a mandatory consent form mentioning the purpose of the study and only those who agreed to be included in the study were able to proceed to the next section of the questionnaire.

**Method:** The following two scales were used to evaluate stress-

- Revised Event Impact Scale (IES-R).
- Brief Symptom Inventory (BSI) (Derogatis, 1993).

**Procedure:** The study was created for both the Hindi and English-speaking populations, taking into account the population's diverse linguistic preferences.

- **Revised Event Impact Scale (IES-R):** The IES-R is a self-report questionnaire that is utilised to diagnose PTSD using DSM-IV criteria. It is made up of 22 elements divided into three categories: intrusion, avoidance, and hyperarousal. The overall score runs from 0 to 88, with 33 indicating a significant likelihood of PTSD symptoms. The measure is appropriate for both healthy and fragile persons who have experienced specific traumatic situations. The IES-R is graded on a 5-point Likert scale <sup>[9]</sup>.
- **Brief Symptom Inventory (BSI) (Derogatis, 1993):** The BSI is a self-report scale with 53 items that is used to measure psychopathological and psychological symptoms. It assesses nine factors, including somatization, obsession-compulsion, and psychoticism. The General Severity Index, Positive Symptom Distress Index, and Positive Symptom Total are combined into the scale. With internal consistency values ranging from 0.71 to 0.85, the BSI exhibits high psychometric qualities <sup>[10]</sup>.

**Data Collection and Analysis:** A cross-sectional sample of yoga practitioners was chosen for the study using an online survey. When electronic consent was received, the data was kept anonymous and confidential, and it was solely utilised for research

reasons. SPSS is used to do statistical calculations. The significance of data was established using Student's t-test analysis and P value.

**3. Results**

During the study period, total 100 females were enrolled for the study. All subject divided into two groups equally. The group A consist 50 females who were practicing Yoga sessions for many years and who continued this practice during the COVID-19 pandemic thrice a week. The group B consist 50 females who were non-Yoga practitioners.

In our study, we have used Revised Event Impact Scale (IES-R) and Brief Symptom Inventory (BSI) (Derogatis, 1993) for measuring the average stress level. According to study results, yoga practitioners had a statistically substantially reduced average severity of stress symptoms than non-yoga practitioners on 5 of the 6 stress markers.

**Table 1:** Average levels of stress indicators of Yoga practitioners in relation to people who do not practice Yoga

Stress Marker	Yoga Practitioners	Non-Yoga Practitioners	p-value
GSI	0.51	0.79	<0.05
PSDI	1.29	1.57	<0.01
PST	18.27	23.30	>0.05
Avoidance	1.27	1.67	<0.01
Intrusion	1.06	1.49	<0.01
Arousal	1.19	1.48	<0.05

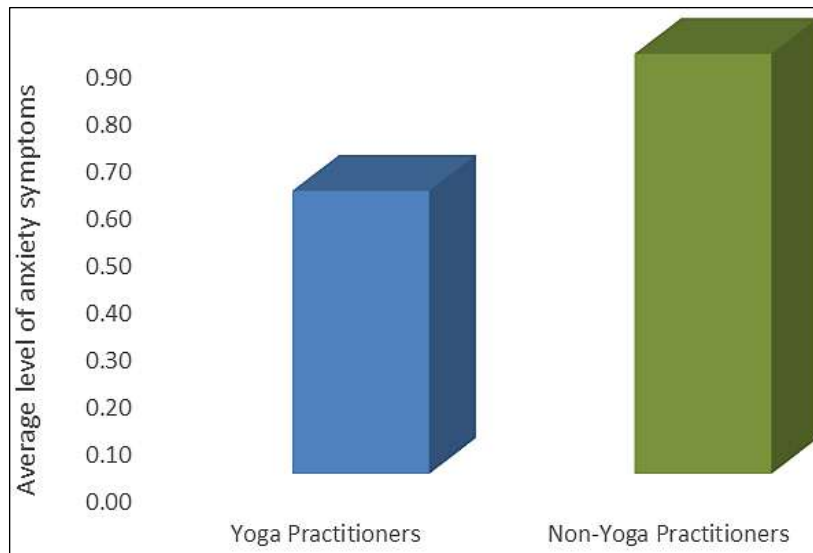
GSI=Global Severity Index; PSDI=Positive Symptom Distress Index; PST=Positive Symptom Total

Average levels of GSI (Global Severity Index) was found 0.51 in yoga practitioners and 0.79 in non-yoga practitioners. PSDI (Positive Symptom Distress Index) was found 1.29 and 1.57 in yoga practitioners and non-yoga practitioners, respectively. Both GSI and PSDI values were statistically significant. PST (Positive Symptom Total) was found 18.27 and 23.30 in yoga practitioners and non-yoga practitioners, correspondingly. In contrast p-value for PST was found >0.05 which is statistically insignificant.

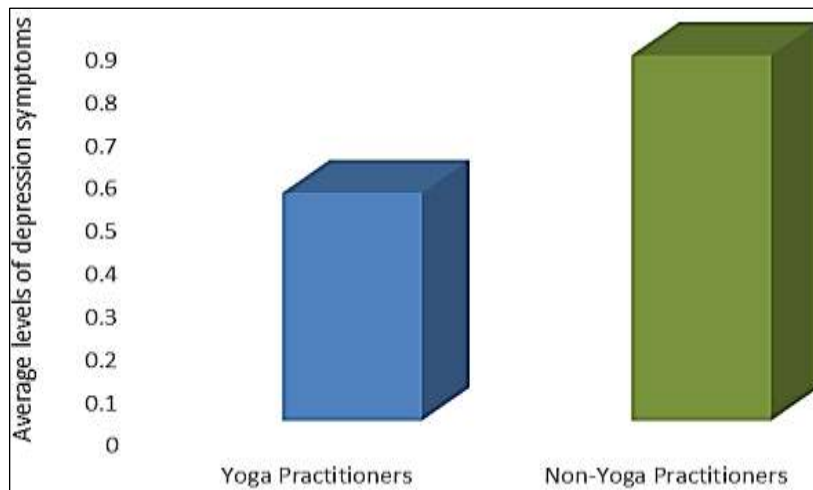
Avoidance, intrusion and arousal in yoga practitioners were recorded 1.27, 1.06, 1.09 and 1.67, 1.49, 1.48 in non-yoga practitioners. All three parameters were found statistically significant.

**Table 2:** Average levels of anxiety and depression in people who practice Yoga compared to people who do not practice Yoga

	Yoga Practitioners	Non-Yoga Practitioners	p-value
Anxiety	0.60	0.89	<0.05
Depression	0.53	0.85	<0.05



**Fig 1:** Average levels of anxiety in people who practice Yoga compared to people who do not practice Yoga



**Fig 2:** Average levels of depression in people who practice Yoga compared to people who do not practice Yoga

In our study, yoga practitioners had lower levels of anxiety (0.60) and depression (0.53) than non-yoga practitioners (0.89 and 0.85, respectively). Because all values are statistically significant, the results imply that the study hypothesis should be accepted.

#### 4. Discussion

This study was undertaken with 100 females to evaluate the impact of yoga practice on perceived stress and mental wellness. Women who practiced yoga showed significant low stress level and most relevant psychological and physical outcome measures when compared to non-yoga practitioners. In addition, the female yoga practitioners had lower levels of GSI-Score, depression and anxiety.

The previous study found that yoga may lower stress levels in healthy adult populations and it was based on eight experiments that found that yoga can reduce stress levels or stress symptoms<sup>[11]</sup>. Previous study has demonstrated that yoga is beneficial for stress reduction, mood enhancement and decreases in sadness and anxiety in people with

depressive syndromes and musculoskeletal pain <sup>[12, 13, 14]</sup>. According to other study, even a brief yoga programme may be beneficial for boosting emotional well-being and stress resistance in the workplace <sup>[15]</sup>, as well as for lowering stress, anxiety, and health status in individuals with mild to moderate levels of stress <sup>[16]</sup>.

Furthermore, our findings are identical to previous research of Priyanka and Rasania <sup>[17]</sup>, which suggested that practicing yoga and meditation, particularly both, can improve mental wellbeing during the COVID-19 pandemic. In their study, a total of the 649 subjects, 58.4% had normal mental wellbeing, while 279 were at risk of psychological distress.

## 5. Conclusion

The study found that yoga practitioners had lower depression, stress, anxiety, wellbeing, and peace of mind compared to non-practitioners. Non-practitioners who followed no yoga had higher depression, anxiety, stress, and lowest wellbeing.

Overall, this study reveals that yoga effectively alleviates stress, anxiety, and sadness during COVID-19 lockdown, suggesting it as a potential supplemental therapy and a potential tool for health practitioners to support yoga-based therapies in managing mental health issues related to COVID-19.

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