

Effects of a yoga protocol in managing depression, anxiety, and stress among office workers during the COVID-19 pandemic: A cross-sectional study

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Abstract

Background

The COVID-19 pandemic is known to have caused serious negative effects on the health and mental well-being of people. Yoga is an easily available, relatively inexpensive, and safe non-pharmacological form of practice and has been found to have physiological and mental health benefits.

Aim

To look into the effects of yoga therapy in the reduction of symptoms of depression, anxiety, and stress among a cohort of office workers during the COVID-19 pandemic.

Methods

A descriptive cross-sectional study was conducted among office workers using a yoga protocol developed for this study. The validated DASS-42

scale was used to assess the levels of depression, anxiety, and stress before and after the intervention.

Results

A significant reduction was observed in the mean scores for depression (61.36%), anxiety (62.79%), and stress (62.63%) respectively among the 240 participants following the 30-day programme of yoga therapy.

Conclusions

Yoga therapy used in the above context appears to have helped in reducing depression, anxiety, and stress among office workers during the pandemic. Randomised controlled trials with larger sample sizes and better clinical method designs are needed to evaluate the level of evidence and effectiveness of yoga therapy in the treatment of above conditions.

Keywords: yoga, stress, anxiety, depression, office workers

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Introduction

Studies conducted across the world during the last two years amidst the COVID-19 pandemic show an increase in the number of people with depression and anxiety (1). Reports suggest that people who had to engage in any type of work during the pandemic are more prone to experience mental health concerns (1-6).

Yoga, with its origin in ancient India, is a form of alternative medicine that implements mind-body practices. It is also an easily available, relatively inexpensive, and safe non-pharmacological form of practice and has been found to have physiological and mental health benefits (7-11). A substantial amount of research is currently being undertaken to look into the effectiveness of mind-body interventions such as yoga therapy as adjunct treatment in conditions such as depressive and anxiety disorders

(11-14). Studies reveal that roughly 20% of those who suffer from mood disorders practise complementary therapies like yoga and aerobics (15).

The aim of this study was to investigate the effects of a 30-day yoga programme on depressive, anxiety, and stress levels among office workers during the COVID-19 pandemic.

Methodology

A cross-sectional design was used among a random sample of 300 adult participants who self-reported symptoms of depression, anxiety and stress. The participants were randomly selected from those who registered for yoga programmes at the Patanjali Yogpeeth, Haridwar, Uttarakhand, India. All participants were provided information prior to being recruited to the study

and only those who provided written informed consent were recruited. None of the participants had a history suggestive of any mental illness. During the study, they were not receiving any psychotropic, any specialised psychological treatments and or taking part or involved in meditation or yoga programmes. They were reviewed at baseline, at the start of the yoga protocol and at regular intervals for worsening of symptoms and for the need for psychotropics and or specialised psychological treatment.

A yoga programme was developed based on previously accepted protocols (16, 17). All recruited participants underwent the prescribed yoga practice every day for 45-50 minutes each morning for 30 days continuously to manage depression, anxiety, and stress.

We used the validated English version of DASS- 42 for this study to measure the pre and post-depression, anxiety and stress levels (18-19). The ethical approval

was obtained from the Ethics Review Committee of Patanjali Research Foundation (PAC/IEC/2022/11/37). The two- sample one-tailed z-test was applied at a 95% confidence interval to look into the effects of the yoga programme (20).

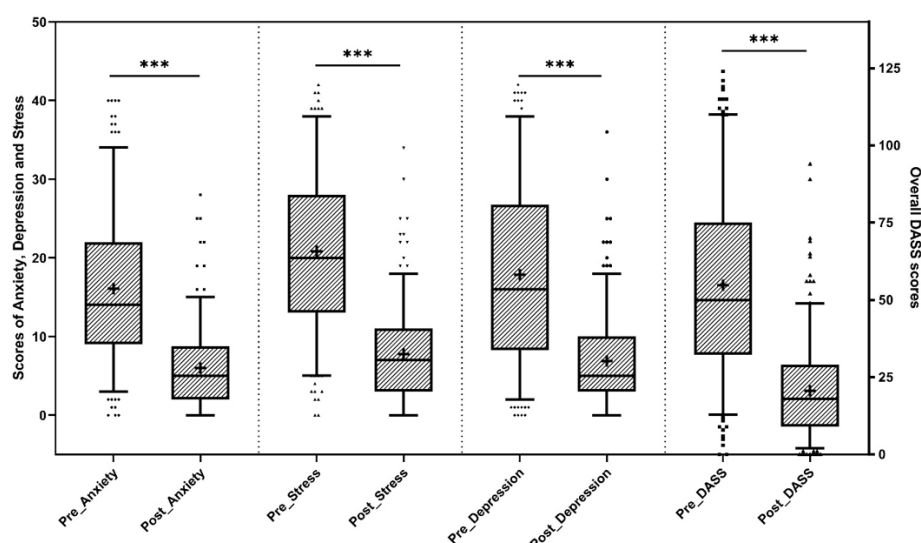
Results

Out of the 300 recruited participants, 240 participants completed the study. Of them, 56.25% of the patients were male. A significant association was found between the age group (Chi-square 19.83; $p < 0.0001$) and marital status (Chi-square 34.32; $p < 0.0001$) and their pre-experimental DASS -42 scores (Table 1). A significant reduction was observed in the mean scores for depression (61.36%), anxiety (62.79%), and stress (62.63%) respectively among the 240 participants following the 30-day programme of yoga therapy (Figure 1).

Table 1. Demographic data with related factors

Parameters	Range	Observed Number (Proportion in %)	Mean Pre-DASS Score $\pm$ SD(N)	Chi-Square Value (Df)	p -Value
Age Group	18-30 31-45 46-60	71 (29.58%) 124 (51.67%) 45 (18.75%)	54.78 $\pm$ 29 (240)	19.83 (2)	<0.0001
Gender	Male Female	135 (56.25%) 105 (43.75%)		1.9 (1)	0.08
Marital Status	Married Unmarried	182 (75.83%) 58 (24.17%)		34.32 (2)	<0.001

Df = Represents Degrees of Freedom; The DASS scores of the participants have compared here with the age group, gender, and marital status of the participants. SD represents Standard deviation and N represents total number of participants.



Here *** $p < 0.001$ denotes that the z statistics result was significant at 99% confidence interval.

Figure 1. Effect of intervention in anxiety, stress, and depression with overall DASS score.

Discussion

Our study found that yoga therapy has an effect in reducing the levels of depression, anxiety and stress among office workers who reported symptoms but didn't need specialised treatment for depression, anxiety, and stress. Previous research indicate that yoga may minimize stress levels by increasing the endorphin and gamma-aminobutyric acid levels in the brain (21-22). In addition, people who practice yoga have been found to have steadier levels of heart rate, respiratory rate, blood pressure, and cardiac output (23-24). The present study has its unique feature as we focus solely on office workers who had concerns about losing their jobs, not getting new employment or reduction of monthly income associated with the COVID-19 pandemic. According to the best of our knowledge, this is the first study of this nature that involved a relatively large sample size of office workers in our setting.

Limitations

The inferences that have been drawn from the findings of this study are limited due to the lack of a control group. Furthermore, the participants came from a variety of professional backgrounds, which may have affected the DASS-42 scores differently depending on their responsibilities and other work-related issues.

Conclusions

Our study provides some evidence that mind-body relaxing exercises such as yoga practices have a positive response in reducing the severity of stress, anxiety, and depression. Further studies including randomized controlled trials in this area are recommended to establish the effectiveness of yoga therapy in the treatment of above conditions.

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Statement of contribution

VA conceptualized the study. AG and RO conducted the study, SG conducted the analysis and wrote the manuscript. AB obtained the financial grant. All authors have approved the final version of the manuscript.

Declaration of interest

None declared.

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References

1. Santomauro DF, Herrera AM, Shadid J, Zheng P, Ashbaugh C, Pigott DM, Abbafati C, Adolph C, Amlag JO, Aravkin AY, Bang-Jensen BL. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet. 2021; 398(10312): 1700-12.
2. Majumdar P, Biswas A, Sahu S. COVID-19 pandemic and lockdown: cause of sleep disruption, depression, somatic pain, and increased screen exposure of office workers and students of India. Chronobiol internation. 2020; 37(8): 1191-200.
3. Pamidimukkala A, Kermanshachi S. Impact of COVID-19 on field and office workforce in construction industry. Proj Leader Soci. 2021; 2: 100018.
4. Chew NW, Lee GK, Tan BY, Jing M, Goh Y, Ngiam NJ, Yeo LL, Ahmad A, Khan FA, Shanmugam GN, Sharma AK. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. Brain, behavior, and immunity. 2020; 88: 559-65.
5. Tan BY, Chew NW, Lee GK, Jing M, Goh Y, Yeo LL, Zhang K, Chin HK, Ahmad A, Khan FA, Shanmugam GN. Psychological impact of the COVID-19 pandemic on health care workers in Singapore. Annals inter medic. 2020; 173(4): 317-20.
6. Sahin T, Aslaner H, Eker ÖO, Gökçek MB, Dogan M. A questionnaire study effect of COVID-19 pandemic on anxiety and burnout levels in emergency healthcare workers. Internation J Medic Sci Clin Inven. 2020; 7(09): 4991-5001.
7. Li AW, Goldsmith CA. The effects of yoga on anxiety and stress. Altern Medi Rev. 2012; 17(1).
8. Smith C, Hancock H, Blake-Mortimer J, Eckert K. A randomised comparative trial of yoga and relaxation to reduce stress and anxiety. Complemen therap in medic. 2007; 15(2): 77-83.

9. Lemay V, Hoolahan J, Buchanan A. Impact of a yoga and meditation intervention on students' stress and anxiety levels. *Am J Pharm Edu.* 2019; 83(5).
10. Ciezar-Andersen SD, Hayden KA, King-Shier KM. A systematic review of yoga interventions for helping health professionals and students. *Com The Med.* 2021; 58: 102704.
11. Cramer H, Lauche R, Langhorst J, Dobos G. Yoga for depression: A systematic review and meta-analysis. *Dep Anx.* 2013; 30(11): 1068-83.
12. Cramer H, Lauche R, Anheyer D, Pilkington K, de Manincor M, Dobos G, Ward L. Yoga for anxiety: A systematic review and meta-analysis of randomized controlled trials. *Dep Anx.* 2018; 35(9): 830-43.
13. Nyer M, Gerbarg PL, Silveri MM, Johnston J, Scott TM, Nauphal M, Owen L, Nielsen GH, Mischoulon D, Brown RP, Fava M. A randomized controlled dosing study of Iyengar yoga and coherent breathing for the treatment of major depressive disorder: Impact on suicidal ideation and safety findings. *Complem Ther in Med.* 2018; 37: 136-42.
14. Brinsley J, Schuch F, Lederman O, Girard D, Smout M, Immink MA, Stubbs B, Firth J, Davison K, Rosenbaum S. Effects of yoga on depressive symptoms in people with mental disorders: a systematic review and meta-analysis. *Br J Spo Med.* 2021; 55(17): 992-1000.
15. de Jonge P, Wardenaar KJ, Hoenders HR, Evans-Lacko S, Kovess-Masfety V, Aguilar-Gaxiola S, Al-Hamzawi A, Alonso J, Andrade LH, Benjet C, Bromet EJ. Complementary and alternative medicine contacts by persons with mental disorders in 25 countries: results from the World Mental Health Surveys. *Epidem Psy Sci.* 2018; 27(6): 552-67.
16. Telles S, Bhardwaj AK, Gupta RK, Sharma SK, Monro R, Balkrishna A. A randomized controlled trial to assess pain and magnetic resonance imaging-based (MRI-based) structural spine changes in low back pain patients after yoga practice. *Med Sci Mon: Int Med J Exp Clin Res.* 2016; 22: 3238.
17. Chetry D, Telles S, Mahadevan J, Prasoon K, Gandharva K, Agrawal M, Balkrishna A. A Comparison of Practice Guidelines for Yoga Breathing from the Traditional Texts and PubMed-Indexed Research. *Int J of Yoga Thera.* 2022; 32(2022): Article-17.
18. Vajpeyee M, Tiwari S, Jain K, Modi P, Bhandari P, Monga G, Yadav LB, Bhardwaj H, Shrotri AK, Singh S, Vajpeyee A. Yoga and music intervention to reduce depression, anxiety, and stress during COVID-19 outbreak on healthcare workers. *Int J Soc Psy.* 2022; 68(4): 798-807.
19. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behv Res The.* 1995 Mar 1; 33(3): 335-43.
20. Ghosh S, Indranil M, Thakur AR, Chaudhuri SR. Assay for rapid screening of phytochemicals as antimicrobial agents. *Am J Biochem Biotech.* 2013; 9(1): 8-11.
21. Bega D, Malkani R. Alternative treatment of restless legs syndrome: an overview of the evidence for mind-body interventions, lifestyle interventions, and nutraceuticals. *Sleep Med.* 2016; 17: 99-105.
22. Venkatesh HN, Ravish H, Silvia CW, Srinivas H. Molecular signature of the immune response to yoga therapy in stress-related chronic disease conditions: an insight. *Intern J Yoga.* 2020; 13(1): 9.
23. Shobana R, Maheshkumar K, Venkateswaran ST, Geetha MB, Padmavathi R. Effect of long-term yoga training on autonomic function among the healthy adults. *J Fam Med Prim Care.* 2022; 11(7): 3471-5.
24. Akhiani P, Banode S, Shah N. A study of cardiorespiratory efficiency following yoga in healthy Indian medical students. *Nation J Physiol, Pharma and Pharm.* 2019; 9(5): 411.