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YOGA AND COVID 19 RISK FACTORS

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ABSTRACT

The whole world is facing the COVID19 pandemic. It has affected more than 213 countries and so far it has caused more than 8 lacks deaths worldwide. Evidence suggests that around more than 50% of the COVID19 positive cases had one more comorbidities. The most common comorbidities reported are hypertension, type 2-diabetes and cardiovascular disease. Further, COVID 19 positive patients with comorbidities had poor prognosis and higher mortality rate compared to controls. Yoga is a safe and cost effective mind body intervention that has got many positive effects in both clinical and non-clinical population.

Yoga has positive impact on hypertension, T2DM and CVD which are found to be the risk factors for COVID 19. Yoga intervention is effective in reducing blood pressure, heart rate, heart rate variability, baroreflex sensitivity in healthy and in patients with hypertension, and also improves lung capacity. It also reduces inflammation, insulin resistance, BMI, and helps to improve HbA1c in T2DM patients. Hence, Yoga intervention may have an important role in prevention and management of COVID 19. Considering the potential health benefiting of yoga in previous studies we hypothesized that yoga intervention may help to reduce the risk factors of COVID 19 morbidity and mortality. This review strongly recommends the experimental studies on yoga in COVID 19.

KEYWORDS: Yoga, COVID19

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INTRODUCTION

Novel corona virus infection disease (COVID19) is declared as a pandemic disease by WHO in January, 2020. The first case of COVID 19 is reported in Wuhan in December 2019. COVID 19 has affected more than 213 countries across the globe (Bajgain, Badal, Bajgain, & Santana, 2020). COVID 19 is caused by novel severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). SARS-CoV-2 spreads faster than any other SARS Corona virus (SARS-COV), and its dissemination rate is 10 times greater to SARS-CoV. Till July 2020, total positive cases were 11 669 259 and 539 906 deaths ("Coronavirus disease (COVID-19)," n.d.). The mortality rate of COVID 19 varies between 2.5% - 5% (Costa et al., 2020).

The mode of transmission of SARS-CoV-2 is through the respiratory droplets. SARS-CoV-2 enters the body through the respiratory system and then it may affect other systems in case of poor immunity, it may affect the other systems, including the cardiovascular system in persons with risk factors such as immune-compromised conditions, advanced age, and existing chronic medical disorders.

Prevention by maintaining social distancing and self-hygiene has been a significant intervention. In addition to that, maintaining a healthy lifestyle with natural supplements to promote immunity is also equally important.

Substantial evidence suggest that hypertension, CVD, and T2DM are the three major risk factors of COVID 19 (J. Arora & Dubey, 1162)(Guan et al., 2020). Approximately 10-32% of COVID 19 cases found to have pre-existing cardiovascular disease and 5-31% had hypertension. A systematic review on 27 studies conducted across different apart of world which included 22,753 subjects found that 57.7% of these patients had existing comorbidities. Of these COVID positive cases, 27.4% had hypertension, 17.4% had diabetes and 8.9% had CVD (Thapa Bajgain, Badal, Bajgain, & Santana, 2020). Another study among 44,672 COVID 19 positive cases average fatality rate was found to be 2.5%, whereas, fatality rate in patients with pre-existing cardiovascular disease was 10% and in hypertension it was 6% (Wu & McGoogan, 2020).

Similarly a study among 1099 COVID patients found that 32.7% cases had hypertension, 16.2% had T2DM, and 5.8% had coronary heart diseases (Guan et al., 2020).

Present COVID 19 management includes symptomatic treatment. Prevention method includes social distancing, using mask, sanitization, and maintaining good immunity by following healthy lifestyle. But, individuals with pre-existing risk factors such as hypertension, T2DM, and heart disease needs an extra-precaution and care. It is important to keep blood pressure and blood glucose levels under control in patients with hypertension and T2DM respectively. This review article highlights the Yoga as a potential intervention in prevention and management of COVID 19.

YOGA

Yoga is an ancient discipline of mind body practices, it emphasis upon individual's physical, mental and spiritual growth. In the present days yoga has become popular as a complementary and alternative medicine. Yoga encompasses self-discipline, social conduct, self-restrain from misconduct in addition to practice of yoga postures, breathing techniques, meditation, and yogic cleansing techniques (Lea, Philo, & Cadman, 2016). Scientific investigations have confirmed the health benefiting effects yoga in both healthy and diseased populations. In most of the research studies conducted to evaluate its health benefits consisted of yoga postures, breathing practices, meditation and yoga based relaxation techniques (Cramer & Lauche, 2018). Some investigations are carried to assess the effects of breathing techniques or meditation exclusively (Kuppusamy, Kamaldeen, Pitani, Amaldas, & Shanmugam, 2018).

Evidence suggests that Yoga has promising role in both communicable and non-communicable disorders(Lea et al., 2016). So far yoga has been positive results in several chronic disorders including diabetes, hypertension, heart disease, asthma, hypothyroidism, HIV/AIDS, tuberculosis, etc (Metri, Pradhan, Singh, & Nagendra, 2018) (Nilakanthan, Metri, Raghuram, & Hongasandra, 2016) (Naoroibam, Metri, Bhargav, Nagaratna, & Nagendra, 2016) (Ganpat, Ramarao, Tikhe, Pailoor, & Metri, 2015).

Yoga helps to prevent type 2 diabetes and cardiovascular disease by improving insulin and glucose tolerance (Yang et al., 2011). Benefits of yoga intervention were documented among the persons with risk of T2DM also. These studies have reported a significant improvement in weight, BMI, waist circumference, blood pressure, insulin, blood glucose and HbA1c following yoga intervention among persons at risk of T2DM (McDermott et al., 2014) (Yang et al., 2011) (Yang et al., 2011) (Yang et al., 2011). Yoga is effective in improving cardiovascular risk factors in patients with T2DM (Yang et al., 2011).

Hence, yoga may help in prevention of hypertension, type diabetes and CVD which are considered as risk factors for COVID 19.

Yoga has positive impact on various clinical conditions which are risk factors for CVD and hypertension such as obesity, dyslipidemia, insulin resistance and blood pressure. A systematic review on several studies with total 794 subjects with metabolic syndrome reported the positive role of yoga in improving blood pressure and waist circumference compared to standard care (Cramer, Langhorst, Dobos, & Lauche, 2016). Further, yoga is effective in improving insulin and HbA1c level among patients with metabolic syndrome (Kanaya et al., 2014).

Yoga is an effective intervention that improves blood pressure among patients with hypertension (Hagins, States, Selfe, & Innes, 2013). A meta-analysis study on 49 studies with 3517 hypertensive subjects concluded that yoga has got anti-hypertensive effects among the patients with hypertension. In this meta-analysis yoga intervention which included breathing techniques and meditation/mental/relaxation practices had shown greater reduction in blood pressure (-11/6mmHg) (Hagins et al., 2013). Further, yoga helps to reduce the CVD risks such as dyslipidemia, overweight, insulin resistance and in patients with hypertension. Yoga helps to improve risk indices related to insulin resistance syndrome (Hagins et al., 2013).

Yoga intervention has found to be having several health benefiting effects in patients with cardio-vascular disease. It reduces several risk factors of hypertension and CVD such as overweight/obesity, dyslipidemia and insulin resistance (Bowman et al., 1997) (Chu, Gotink, Yeh, Goldie, & Hunink, 2016). Yoga helps to improve

dyslipidemia, blood pressure, heart rate and atherosclerosis among patients with CVD (Chu et al., 2016). A one year follow-up study yoga based lifestyle intervention demonstrated coronary artery stenosis in patients with coronary artery disease.

Evidence shows heightened risk of COVID 19 infection and mortality in case of COVID 19 positive is more in patients with existing comorbidities such as hypertension, T2DM and heart disease. Hypertension, T2DM and CVD are the most common risk factors of COVID 19. Yoga is a discipline of mind body practices has several health benefiting effects. Large data of evidence suggests that yoga improves various metabolic risk factors such as blood pressure, blood glucose, lipid parameters and insulin in healthy and in patients with hypertension, T2DM and CVD patients. This review suggests that yoga may help in prevention and the faster recovery COVID 19 by improving the risk factors such as hypertension, T2DM and CVD. Further, yoga can be adopted as a preventive measure in COVID 19.

CONCLUSION

In addition to proper medication, practice of yoga may help to control blood pressure and blood glucose in patients with hypertension and T2DM respectively. Thus, yoga may help to reduce the risk of COVID 19 infection and it may also helps to faster recovery and less severity in case of infection. This review recommends experimental studies to assess the efficacy of yoga in improving COVID 19 risk factors.

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