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Effect of yoga on health

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Abstract
Now a day alarming awareness was observed in health and natural remedies among people by yoga and pranayama which was originated in India thousands years ago. It has been established as an effective method for improving health in addition to prevention and management of diseases. With increasing scientific research in yoga, its therapeutic aspects are also being explored. Yoga is reported to reduce stress and anxiety, improves autonomic functions by triggering neuro-hormonal mechanisms by the suppression of sympathetic activity, and even, now-a-days, several reports suggested yoga is beneficial for physical health of cancer patients also. This article mainly focus on how yoga is helpful in maintain physical and mental health.

Keywords: yoga, mental health, physical health, hypertension, cancer

1. Introduction
Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. There are numerous modern schools of yoga i.e., Iyengar, Viniyoga, Sivananda, etc., each having its own distinct emphasis regarding the relative content of physical postures and exercises i.e. asanas, breathing techniques i.e. pranayama, deep relaxation, and meditation practices that nurture awareness and ultimately more profound states of consciousness.
Kirkwood *et al.* (2005) found that asanas is very helpful in enhancing the physical flexibility, coordination and strength, while the breathing practices and meditation is helpful for diminish anxiety leading to higher quality of life. Other beneficial effects might involve a reduction of distress, blood pressure, and improvements in resilience, mood, and metabolic regulation (Yang, 2007). A growing body of research evidence supports the belief that certain yoga techniques may improve physical and mental health through down-regulation of the hypothalamo pituitary adrenal (HPA) axis and the sympathetic nervous system (Bussing *et al*, 2012).In this article, we are trying to summarize the current evidence on the impacts of yoga on various components of mental and physical health [15, 13, 26, 5].

2. Impacts of yoga on mental health
2.1 Stress and anxiety
Yoga as stress-reduction techniques was analyzed by Chong *et al.* (2011) for minimizing stress and anxiety. One such practice, yoga, has received less attention in the medical literature though it has become increasingly popular in recent decades (Banerjee *et al*., 2007). Available reviews of a wide range of yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression (Ospina, 2007). The work of Kirkwood *et al.* (2005), Brown *et al.* (2005), Smith *et al.* (2007) and Saheed *et al.* (2010) clearly demonstrated beneficial effects in favour of the yoga interventions [6, 2, 12, 15, 4, 23]

2.2 Depression
From the literature it is evident that yoga practice reduces depression among the individual suffering from acute stress (Pilkington, *et al.* 2005; Uebelacker, *et al.* 2010). Pilkington *et al.* (2005) conducted an experimental study where emotionally distressed women are treated with 90-min yoga classes a week for 3 months. At the end of 3 months, women in the yoga group reported improvements in perceived stress, depression, anxiety, energy, fatigue, and well-being. Depression scores improved by 50%, anxiety scores 30%, and overall well-being scores by 65%. Initial complaints of headaches, back pain, and poor sleep quality also resolved much more often in the yoga group than in the control group [15, 25].

2.3 Schizophneia
Duraiswamy *et al.* compared the effects of four months of daily yoga asana and pranayama with exercise on symptoms of psychosis in sixty one schizophrenic patients receiving antipsychotic treatment. The exercise intervention involved walking, jogging, seated and standing exercises, and relaxation—activities that closely approximate yoga. Both the yoga and exercise groups exhibited significant reductions in psychotic symptom, but the yoga group improved significantly better.

3. Impacts of yoga on physical health
3.1 Blood pressure and hypertension
It is well known that many antihypertensive agents have been associated with numerous undesirable side effects. In addition to medication, moderately intense aerobic exercise is well known to lower blood pressure. Interestingly, it has been very convincingly demonstrated in a randomized controlled study that even a short period of regular yogic practice at 1 h/day is

as effective as medical therapy in controlling blood pressure in hypertensive subjects (Ospina, 2007). Yoga, together with relaxation, biofeedback, transcendental meditation, and psychotherapy, has been found to have a convincing antihypertensive effect. Pilkington, *et al.* (2005) reported on 37 studies investigating the effects of yoga on blood pressure and hypertension, and found a reduction of systolic and/or diastolic pressure [12, 15]

3.2 Coronary atherosclerosis

In an experimental study, patients with angiographically proven coronary artery disease who practiced yoga exercise for a period of one year showed a decrease in the number of anginal episodes per week, improved exercise capacity and decrease in body weight (Ornish, *et al.* 2007; Daubenmier *et al.*, 2007). Serum cholesterol levels (total cholesterol, LDL cholesterol and triglyceride levels) also showed greater reductions as compared with control groups [12, 8]

3.3 Body weight

It is well-known fact that obesity and increased body weight are highly risky for ischemic heart disease and hypertension. Yoga has been found to be particularly helpful in the management of obesity. A randomized controlled study revealed that practicing yoga for a year helped significant improvements in the ideal body weight and body density (Sharp *et al.*, 2007) [22].

3.4 Cardiovascular Endurance

Based on different studies, Raub's (2002) reviewed and found significant improvements in overall cardiovascular endurance of young subjects who were given varying periods of yoga training from one months to one years. As expected, physical fitness increased in adolescents or young adults (athletes and untrained individuals) compared to other forms of exercise, with a longer duration of yoga practice resulted in better cardiopulmonary endurance (Innes, 2005) [18, 11]

3.5 Physical Fitness

Roland (2011) reviewed the effect of yoga on older adults regarding physical fitness. Ten studies with 544 participants were included; 5 of these studies were RCTs, and 5 studies had a single-arm pre/post-design. With respect to physical fitness and function, the studies reported moderate effect sizes for balance, body flexibility, body strength, and weight loss. However, there is still a need for additional research trials with adequate control interventions to verify these promising findings [11]

4. Impact of yoga on certain diseases

4.1 Cancer

Tsauo (2011) reported that yoga is beneficial for people with cancer in managing symptoms such as fatigue, insomnia, mood disturbances and stress, and improving quality of life. However, until now the size of the effect has not been quantified. Bower (2005) also found that yoga may have positive effects on psychological health of cancer patients. Many cancer patients experience cancer-related psychological symptoms, including mood disturbances, stress, and distress. But, more attention must be paid to the physical effects of yoga and the methodological quality of future research, as well as to improve these areas in the future [24, 3].

4.2 Diabetes mellitus

Yoga has been shown to be a simple and economical therapeutic modality that may be considered as a beneficial adjuvant for non-insulin dependent diabetes mellitus (NIDDM) patients (Ajasir, 2010). In a group of diabetics who practiced yoga regularly, there was a significant reduction in the frequency of hyperglycemia and area index total under the oral glucose tolerance test curve. This experimental study showed that there was also a decrease in the need for oral hypoglycemic to maintain adequate blood sugar control in the population that practiced yoga. Gordon *et al.* (2008) compared the effects of 6 months of weekly classes plus home practice of yoga with aerobic exercise plus stretching. Compared to baseline measures and a control group, both yoga and exercise led to significant reductions at 3 and 6 months in fasting blood glucose.

5. Discussion

In the light of the above, it is evident that yoga therapies including asanas, pranayam, meditation helps to improve not only the physical fitness but also relaxed the person suffering from depression, anxiety, etc. It is possible that the differences in fitness outcomes found in the comparison studies of yoga and exercise might not have been found if exercise were compared to the more vigorous forms of yoga. The differences that have been found between yoga and exercise interventions may be a result of how the two differ in their effects upon the SNS and HPA axis. Different levels of intensity of exercise have been shown to affect the HPA axis response to acute stress differently.

It is not surprising that researchers have found positive results regarding yoga in so many diverse areas. In three studies comparing yoga with meditation techniques such as progressive relaxation, yoga was found to be equal or superior to progressive relaxation in lowering blood pressure (Cusumano and Robinson, 1993) and in improving perceptions of mood and anxiety (Smith *et al.*, 2007; Shannahoff-Khalsa, 1993). When yoga compared with supportive psychotherapy in randomized trials involving cancer patients undergoing chemotherapy, it has been shown to be significantly better at decreasing levels of nausea and vomiting (Raghavendra, 2007) and strengthening the immune system (Rao *et al*, 2007). Yoga triggers neurohormonal mechanisms that bring about health benefits, evidenced by the suppression of sympathetic activity. Thus, it reduces stress and anxiety, improves autonomic and higher neural center functioning and even, as shown in some studies, improves physical health of cancer patients [7, 23, 16, 17].

6. Conclusion

It is quite likely that yoga may help to improve patient, self-efficacy, self-competence, physical fitness, and group support, and may well be effective as a supportive adjunct to mitigate medical conditions, but not yet as a proven stand-alone, curative treatment. However, there is a definite need for more

directed scientific work to be carried out to elucidate the effects and the mechanisms of such effects of yoga on the human body in health and disease. Considering the scientific evidence discussed thus far, it is fair to conclude that yoga can be beneficial in the prevention and cure of diseases.

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