Integration of yoga with modern medicine for promotion of cardiovascular health

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ABSTRACT

Yoga and modern medicine are not exclusive, but complementary systems. Their combination can provide us with a holistic health care. While modern medicine has a lot to offer mankind in its treatment and management of acute illmesses and emergency conditions, yoga offers services in terms of preventive, promotive, and rehabilitative methods in addition to many management methods to tackle modern illnesses. Several published studies have demonstrated the health benefits of yoga. Regular practice of yoga has shown significant improvement in cardiovascular risk factors such as hypertension, diabetes, hyperlipidemia, obesity, metabolic syndrome, and psychological stress. However, there are many limitations with respect to the reported studies. Therefore, large multicentric trials using uniform methodologies and long-term outcomes are needed to confirm the findings. In view of the existing knowledge, yoga is a cost-effective and beneficial supportive/adjunct treatment without side effects. There is a favorable atmosphere for integration of alternate medical systems in resource-strained public health systems.

Keywords: AYUSH, diabetes, hypertension, metabolic syndrome, yoga

Introduction

Yoga is an ancient discipline which originated in India 5000 years ago. The word “Yoga” comes from a Sanskrit word “yuj” meaning to join or unite. In common parlance, yoga has two broad types: pranayama and asanas. Pranayama is the practice of controlling the breath, which is the source of our prana, or vital life force. Asana is referred to pose or posture of the body to help master the body and enhance the body's functions. Patanjali in ashtanga yoga defines asanas as steady and relaxed pose. Recognizing its importance, the United Nations has declared June 21 as the “International Day of Yoga.” It brings balance to the physical, mental, emotional, and spiritual dimensions of the individual. Yoga is a holistic lifestyle that includes all components of healthy lifestyle. Yoga is based on five basic principles: proper relaxation, proper exercise, proper breathing, proper diet, positive thinking and meditation.

Hence, some describe it as a “lifestyle polypill.” Yoga helps patients take control of their own health. They learn to make an effort and change their lifestyle for the better. Lifestyle modification is the buzzword in modern medical circles and yoga can play a vital role in this regard.

Yoga and Cardiovascular Health

Several studies have demonstrated beneficial effects of yoga on cardiovascular ailments and its risk factors. This paper reviews the existing evidence related to the effects of yoga on various conditions such as hypertension, diabetes, metabolic syndrome, cardiac arrhythmia, obesity, oxidative stress, atherosclerosis, and psychological stress.
Hypertension

Several randomized control trials (RCTs) and meta-analysis have demonstrated long-term modest effect in reducing blood pressure.\(^6\)\(^-\)\(^8\) Recently, controlled trials and meta-analysis have also reported about the immediate and long-term effects of yoga in prehypertension patients and mildly hypertensives.\(^9\)\(^-\)\(^1\)\(^5\) In view of this evidence, American Heart Association has suggested that all individuals with blood pressure >120/80 mmHg should consider yoga as an adjunct method to lower blood pressure when clinically appropriate.\(^1\)\(^6\)

Diabetes Mellitus and Metabolic Syndrome

Several studies and meta-analysis have concluded that yoga can be considered as add-on intervention for management of diabetes due to its impact on glycemic control, lipid levels, blood pressure, psychological well-being, and body weight.\(^1\)\(^7\)\(^-\)\(^2\)\(^2\) However, Innes and Selfe has concluded by saying that due to the methodological limitations of existing studies, better evidence is required to confirm the potential benefits of yoga programs among diabetic patients.\(^2\)\(^2\)

Regular yoga has been shown to improve several components of metabolic syndrome such as insulin resistance, body mass index, waist circumference, dyslipidemia, blood pressure, and HbA1C.\(^2\)\(^3\)\(^-\)\(^2\)\(^9\)

Inflammation and Oxidative Stress

Yoga for 12–16 weeks results in a significant decline in fibrinogen and increase in fibrinolytic activity.\(^3\)\(^0\)\(^-\)\(^3\)\(^1\) It has also shown to reduce oxidative stress.\(^1\)\(^9\)\(^-\)\(^3\)\(^4\)\(^-\) Sarvottam et al. demonstrated a significant reduction in plasma IL-6 and an increase in plasma adiponectin following a 10-day yoga intervention.\(^3\)\(^5\)

Regression of Atherosclerosis

Both early and advanced atherosclerosis have been shown to be significantly reduced by regular practice of yoga for 9 months to 1 year.\(^3\)\(^6\)\(^-\)\(^3\)\(^7\)

Cardiac Arrhythmias

Yoga is also shown to be an adjunctive approach for the management of cardiac arrhythmias such as atrial fibrillation and premature ventricular ectopics.\(^3\)\(^8\)\(^-\)\(^4\)\(^0\)

Obesity

Yoga has been found to be particularly helpful in the management of obesity and improvement in serum lipid profile in patients with known coronary heart disease, diabetes as well as in healthy controls.\(^2\)\(^6\)\(^-\)\(^2\)\(^7\)\(^,\)\(^3\)\(^1\)\(^-\)\(^3\)\(^4\)

Psychological Problems

Yoga has a lot to offer in terms of psychosomatic disorders and stress-related disorders such as diabetes, asthma, irritable bowel syndrome, hypertension, and other functional disorders. Yoga impacts negative affecting states such as anxiety, depression, and stress and improves cognitive function and adherence to healthy lifestyle behaviors.\(^1\)\(^4\) Few other studies also suggest that stress can be reduced significantly with regular practice of yoga and meditation.\(^4\)\(^5\)\(^-\)\(^4\)\(^7\) Thus, yoga may be incorporated into structured cardiac rehabilitation programs as an adjunct to improve the psychological symptoms associated with cardiovascular events in addition to improving patients’ cognitive and cardiovascular functions.

Modern Medicine and Yoga

Modern medicine and yoga have a rational and scientific background and hence are bound to come together. Yoga and modern medicine are not exclusive, but complementary systems. Their combination can provide us with a holistic health care that will take care of the mental health including psychosomatic health of the population.\(^4\)\(^8\) While modern medicine has a lot to offer mankind in its treatment and management of acute illnesses and emergency conditions, yoga offers services in terms of preventive, promotive, and rehabilitative methods in addition to many management methods to tackle modern illnesses. Modern medicine is materialistic and concerned primarily with our body. Drugs are the cornerstone of management. In contrast, yoga is a holistic system for the integrated development of our physical, mental, as well as spiritual aspects. Modern medicine has recognized the fact that relaxation of mind is essential for a healthy body and mind. Practice of yoga disciplines strengthens, quiets, and relaxes our body and mind.\(^4\)\(^9\) Yoga is an excellent tool for promoting health that can enrich modern medicine. The practice of yoga leads to the efficient functioning of the body with homeostasis through improved functioning of the psycho-immuno-neuro-endocrine system.\(^4\)\(^8\)

Modern medicine alone is far from effective in chronic degenerative, old age and lifestyle disorders which are
the bane of modern society. Many of the practices of physiotherapy have a lot in common with yoga practices. Thus, there is a pressing need for promoting yoga as a complementary system to augment modern medical care.

As Plato said, “The treatment of the part shouldn’t be attempted without a treatment of the entirety,” meaning that the treatment of the body without treating the mind and soul would be a futile waste of time. The integration of modern medicine with yoga will take care of the body, mind, and soul.

Further Research

Although several published studies have demonstrated the benefits of yoga, there are many limitations with respect to the reported studies. Most studies have several limitations such as lack of adequate controls, small sample size, inconsistencies in baseline characteristics, short follow-up period, and varying methodologies. There are limited number of RCTs that have evaluated the impact of yoga on health. Therefore, large multicentric trials using uniform methodologies and long-term outcomes are needed to confirm the findings. Further, systematic reviews need to be carried out to collate existing evidence around this matter. Centers of excellence for research in yoga should be set up. Existing institutes’ capacity should be augmented. Research should be promoted to generate conclusive evidence on the role of specific yoga interventions for various diseases.

Integration of Yoga into Public Health System in India

The Indian systems of medicine have age-old acceptance in the communities in India. Under NRHM, the Government of India is actively seeking to mainstream AYUSH into the public health-care delivery system. To achieve integration of yoga into the public health system, we need workforce trained in yoga and health. To fulfill the workforce gap, investments are required to set up institutes of excellence to impart yoga training and carry out research. One yoga therapy center should be opened in district hospitals to provide yogic therapy for specific diseases and also as a synergistic therapy to other systems of treatment.

Government of India launched the National AYUSH Mission in 2014 to promote AYUSH medical systems through cost-effective AYUSH services, strengthening of educational systems, and enforcement of quality control of drugs and raw materials. Under this program, AYUSH Wellness/Therapy Centres shall be opened focusing on yoga and naturopathy. Yoga camps and awareness drives are also planned. School health program through AYUSH shall address the physical and mental health needs of schoolgoing children by providing AYUSH services including yoga and counseling.[50] The National Health Policy 2017 also has shifted focus from “sick care” to “wellness” through the establishment of “Health and Wellness Centres” at primary care facilities providing a comprehensive preventive care package including AYUSH.

We need to educate the public about the beneficial effects of yoga on psychosomatic states, respiratory, cardiovascular, and other systems and its role as an adjunct to modern medicine for various ailments. Integration of yoga with modern medicine also mandates regulatory procedures and standard measures for approving yoga interventions for specific ailments. This requires rigorous large-scale clinical trials to prove the safety and efficacy of yoga therapies.

In every clinical encounter, appropriate measures should be taken so that clinicians take the initiative to begin the discussion about practice of yoga and promote yoga for specific illnesses. It requires that the physicians know the preventive, promotive, and therapeutic benefits of yoga interventions, though they need not be formally trained in yoga. This requires introduction of yoga into the undergraduate medical curriculum.

However, yoga intervention programs require an active participation of the individuals as do all behavioral interventions, and thus adherence might be a crucial point that limits potentially beneficial effects of yoga. A positive feature is that the experience of well-being both spiritual and mental due to the practice of yoga can support regular practice, which in turn supports a desire to adopt and maintain healthy behaviors. Furthermore, practice of yoga enhances self-efficacy and self-confidence.[51]

Conclusion

Globally, today, there is greater awareness about complementary health systems. There is a favorable atmosphere for integration of alternate medical systems in resource-strained public health systems. Large multicenter well-planned randomized trials are needed to confirm the beneficial impact of yoga on health. In view of the existing knowledge, yoga is a cost-effective and beneficial supportive/adjunct treatment without side effects. In this era of noncommunicable and lifestyle disorders
with greater political support for traditional therapies in primary health care in the form of recognition by international bodies such as WHO, it appears appropriate to incorporate yoga for primary and secondary prevention of cardiovascular disease.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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