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The benefits of yoga: A review

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Abstract

The aspect of research on the benefits of yoga for improving overall health has increased dramatically in the past decade. It has also become quite specialized, with most reviews of yoga research focusing only a single disease or population. Our objective was to review the state of research more broadly, providing examples of and references for notable yoga research across many different research modalities, diseases, and populations.

Keywords: Yoga, disease

Introduction

“Yoga means addition—addition of energy, strength and beauty to body, mind and soul.” (Amit Ray) Yoga is mastery over the mind. (Yoga Education, NCTE) The word 'yoga' means "to join or Yoke together". It brings the body and mind together to become a harmonious experience. Yoga is a method of learning that aims at balancing "Mind, Body and Spirit". Yoga is a practice with historical origins in ancient Indian philosophy. (Role of yoga in health and fitness, Athokpam Right kumari Devi) Yoga is generally accepted as an ancient tradition that incorporates postures, breathing techniques, meditation, and moral and ethical principles. (M. Hagins, S. C. Haden, and L. A. Daly, 2013) ^[11]. The scope of yoga as portrayed in the Bhagavad-Gita and Upanishad is far more comprehensive. As swami Vivekananda put it “It is a means of compressing one’s evolution into a single life or a few month or even a few hours of one’s bodily existence”. In general, there is a growth process due to interactions with nature in all creation. (Yoga Education, NCTE) It has been suggested that yoga can lead to enhanced productivity and increased quality of life. The aim of this study is to investigate the physical, physiological and mental health benefits of yoga.

Yoga and Physical Health

According to the National Institute of Health, 9.5% of Americans practice yoga. As yoga continues to grow, more studies are showing the mental and physical benefits. Yoga combines the physical postures or asanas with the mental conscious breathing and the spiritual connection with universal consciousness. (The Proven Health Benefits of Yoga and Meditation, January20, 2018) ^[35]. Yoga has many physical benefits, including encouraging relaxation, increasing flexibility and strength, lowering blood pressure, and toning muscles. This practice has also been shown to alleviate arthritis and back pain and boost heart and mental health.

There are data that prove yoga's benefits. According to a randomized controlled trial at (Johns Hopkins, Moonaz SH, Bingham CO 3rd, Wissow L, Bartlett SJ., 2015) 2 groups of participants were assigned to a wait list or to twice-a-week yoga and an at-home yoga practice. After 8 weeks, the yoga group showed a significant reduction in pain as well as better moods, improved physical functions, and increased energy levels. Literature supports the impact of yogic practice on physical performance especially, the aerobic aspects. The study therefore attempted to compare the effect of 3 months yogic practice on aerobic and anaerobic capacity. And the study revealed that 3 months continuous yogic exercise resulted improvement in anaerobic capacity of individuals, as compared to aerobic capacity. (Saha M, Tomer OS, Halder K, *et al.*, 2010) ^[22].

Yoga and Physiological Health

Research also shows that yoga affects cardiovascular health, lowering blood pressure and the heart rate. It may also improve quality of life in those with atrial fibrillation, a common heart rhythm disorder. (Wahlstrom M, Rydell Karlsson M, Medin J, Frykman V., 2017) ^[27]. Yoga and meditation help mitigate stress by decreasing activity in the sympathetic nervous system, otherwise known as the "fight or flight" response, which is typically responsible for constricting blood vessels and raising blood pressure and the heart rate.

Yoga's comprehensive approach has been shown to have a cumulative effect on internal healing by engaging all muscle groups, internal systems, organs, and glands. In addition, as with many forms of exercise, yoga therapy helps increase blood flow, thereby circulating vital nutrients, oxygen, haemoglobin, and red blood cells to body tissues (Woodyard C., 2011) ^[28]. Cancer patients in particular have realized the homeopathic effects of yoga therapy and have attributed the relief of nausea, fatigue, pain, and even toxicity to yoga practice, minimizing their need for related prescription medications. Further, yoga has been credited for leading to increased flexibility, improved gait, and increased strength by alleviating pain that would otherwise hinder movement. (Woodyard C., 2011) ^[28].

Yoga practice has also led to pain relief and increased range of motion for individuals with musculoskeletal disorders including osteoarthritis, carpal tunnel syndrome, multiple sclerosis, and chronic back pain. In addition, yoga may hold an important role in improving cardiopulmonary measures including lung function, exercise capacity, and resting heart rate. Yoga practitioners have displayed a reversal of the negative effects of stress, and reduced risk factors for cardiovascular disease and hypertension. Yoga practice has helped individuals maintain and enjoy healthier body weights, lipid levels, and blood pressures. Further, yoga has been shown to reduce the symptoms of obstructive airway diseases by significantly improving oxygen delivery. (Raub JA., 2002) ^[20].

This study was conducted to examine the effect of yoga on cardiovascular function in subjects above 40 yrs of age. Pulse rate, systolic and diastolic blood pressure and Valsalva ratio were studied in 50 control subjects (not doing any type of physical exercise) and 50 study subjects who had been practicing yoga for 5 years. And the results indicate that yoga reduces the age related deterioration in cardiovascular functions. (Bharshankar JR, Bharshankar RN, Deshpande VN, Kaore SB, Gosavi GB, 2003) ^[4].

Yoga and mental health

It has been established that higher intensity and integrative yoga practices coincide with greater health benefits. (Smith JA, Greer T, Sheets T, Watson S., 2011) ^[23]. As the concept of yoga continues to commercialize, these benefits are becoming more evident to the general population. Yoga is gaining accreditation and popularity as it forges its way into mainstream USA. The ultimate question of yoga is why people practice and what makes one choose (or forgo) this exercise form. Some practitioners, known as yogis (male) or yoginis (female), claim they were drawn to yoga for acclaimed aesthetic reasons, such as health promotion, health maintenance, or weight loss. Others seek the benefits of yoga on a deeper level, desiring personal wellness and the yogic virtues of self-acceptance, mindfulness, and non-competitive spirit (Atkinson NL, Permut-Levine R., 2009) ^[2]. Still others

use yoga as a route which allows them to prevent, reduce, or control diseases and their associated risk factors (Evans S, Sternlieb B, Tsao JC, Zeltzer LK. 2009) ^[7]. For those combating chronic illness or rehabilitating an injury, yoga can be seen as an alternative outlet for therapy and healing, as discussed below. However, the most common reason for taking part in a personal yoga practice is to more effectively manage stress. (Evans S, Sternlieb B, Tsao JC, Zeltzer LK. 2009) ^[7].

Stress, which contributes to 80% of all diseases and illnesses (Smith JA, Greer T, Sheets T, Watson S., 2011) ^[23], inhibits an individual's immune function and quality of life (Chong CS, Tsunaka M, Tsang HW, Chan EP, Cheung WM., 2011) ^[6]. A review of literature on yoga and stress management in healthy adults was conducted by Chong *et al.*, (Chong CS, Tsunaka M, Tsang HW, Chan EP, Cheung WM., 2011) ^[6]. Eight studies were reviewed, in which both randomized controlled trial (RCT) and clinical controlled trial (CCT) formats were used. The selection of studies featured Hatha, Kundalini, or Iyengar yogic styles. In all studies, a reduction in stress was noted immediately following yogic intervention. Along with reducing negative affect, yoga was found to enhance cognitive function and one's perception of health or wellbeing. Participants also discussed improved sleep, optimism, and quality of life. In addition, the yogic practice of diaphragmatic breathing is mentioned as a vital component to stress management. This breathing technique supports increased respiratory efficiency, improves functions of the nervous and endocrine systems, and encourages the fine tuning of the body to maintain a state of homeostasis (Serber E., 2000) ^[25].

Yoga's function in the alleviation of stress can resultantly ameliorate various factors for chronic disease. Because high blood pressure, high glucose, high cholesterol, and obesity pose the greatest risks for chronic conditions, ways of preventing, limiting, or treating these health issues is paramount. Yoga, when used as an integrative health tool, can simultaneously impact all four interrelated factors. (Serber E., 2000) ^[25].

Thirty-two experimental, quasi-experimental, or observational articles using both diseased and healthy populations were reviewed by Yang (Yang K., 2007) ^[32]. The results from Yang's 2007. ^[32] Study indicated that yoga has the ability to positively impact primary risk factors (high blood pressure, high glucose, high cholesterol, and obesity) for chronic disease, thereby improving one's personal health and longevity. Further, yoga has a direct relationship to weight loss. Yoga practiced at regular intervals allowed participants of one study reviewed by Yang to attain a normal body weight within the first year of intervention. Yang indicated that yoga contributes to a significant decrease in levels of blood glucose, with the earliest results shown after 40 days of practice. Additionally, in patients with hypertension, cardiovascular disease, and diabetes, yoga helped lower blood pressure levels during the third week of trials. Within the fourth week of yogic exercise, Yang further noted measurable decreases in cholesterol with improvements in deterioration. Yogis and yoginis can enjoy the health benefits of yoga early on in their adoption process (Yang K., 2007) ^[32]. This is opposed to the delayed satisfaction oftentimes experienced when engaging in traditional exercise programs.

Narasimhan *et al.* (2011) ^[18], examined yoga's influence on personal affect and found that, after one week of yoga practice, study participants experienced a 47% decrease in overall negative affect and a 13% increase in overall positive

affect. The most pronounced emotional differences noted were a 55% decrease in irritability and a 28% increase in feelings of contentment. The seemingly inherent ability of yoga to balance the autonomic nervous system leads to positive emotional shifts for individuals, thus enhancing quality of life.

Woodyard (Woodyard C., 2011) [28]. found that the restorative, rejuvenating, and relaxing nature of yoga has led to its increased usage in treating multiple common disorders. Yoga improves optimism, immunity, and self-acceptance while minimizing fear, anxiety, and irritability. This is essential for individuals who are battling mood disorders. The emotional shift provided by yoga can lead to increased quality and quantity of sleep, thereby improving symptoms of insomnia (Woodyard C., 2011) [28]. Overall, yoga therapy leads to a healthier body image, self-confidence, and mindfulness (Woodyard C., 2011) [28]. and, interestingly, Woodyard noted that an increase in these measures reduced the risk of developing addictive behaviors.

For certain ailments, yoga has been recognized as an equally effective method of treatment for disease as that of traditional medicine. This evidence of healing, however, is of a holistic platform, one which nurtures the body, mind, and soul to influence three primary realms of wellbeing – physical, emotional, and spiritual. Although not a customary method of treatment, yoga is a trendy physical practice that has yielded attainable health benefits to those of both sound and compromised immunities (Evans S, Sternlieb B, Tsao JC, Zeltzer LK., 2009) [17].

Monk-Turner and Turner (2010) [17]. also found that yoga practitioners were more likely to experience increased physical wellness, mental wellness, and spiritual wellness. Yoga practitioners in the Monk-Turner and Turner study displayed healthier levels of fitness, bodyweight, range of motion, and nutrition; demonstrated better ethics, healthier emotions, stronger morals, and an increased ability to express their feelings; and illustrated a healthier approach to faith. Overall, the yoga participants exhibited more positive outlooks on life and demonstrated more genuine happiness. They were more likely than their counterparts to engage in other healthful behaviors and make mindful, responsible choices.

Lee et al. (2004) [14]. Found that 3-month yoga program improved mental health scores and other quality of life measures. Yoga Type: Dahn-hak. 1) Stretching exercises for large muscle groups and shoulders, neck, hips, back, and knees, 2) postures are held for “energy accumulation 3) 5- to 10-minute meditation intended to facilitate “energy awareness”, 4) repetition of the large muscle group stretches. Yoga Frequency/Duration: 1-hour class offered 2-to-3 times per week for 3 months. At baseline, new participants reported lower scores than U.S. norms for 7 of 8 domains of the Medical Outcomes Study SF-36 general health questionnaire. After 3 months of training, within patient change scores improved in all domains ($P < .0001$), including a change of +15.5 in the mental health domain. In hierarchical regression analysis, younger age, baseline level of depressive symptoms and a history of hypertension were independent predictors of greater improvement in the SF-36 mental health score. Five participants (2.9%) reported a musculoskeletal injury.

A review of eight clinical trials showed the yoga may help treat depression. (Uebelacker LA, Epstein-Lubow G, Gaudiano, BA. Hatha, 2010) [26].

A national survey of yoga users showed it to be helpful for overall health and well-being, mental health, and

musculoskeletal conditions. (Birdee GS, Legedza, AT, Saper RB, 2008) [3].

A 5-week program of yoga showed reductions in depression and anxiety among young adults. Yoga. (Woolery A, Myers H, Sternlieb B, Zeltzer L., 2004) [29]. A 6-month yoga program improved sleep quality, depression, and perceived health status among older adults who reside in the community. (Chen KM, Chen MH, Chao HC, Hung HM Lin, HS, et al., 2008) [5].

Short educational program for stress management and lifestyle modification based on yoga leads to reduction in anxiety. (Gupta N, Khera S, Vempati RP, Sharma R, Bijlani RL., 2006) [10].

Exercise, specifically walking and yoga, have been proven effective in enhancing quality of life and decreasing fatigue in breast cancer populations. (Galantino ML, Cannon N, Hoelker T, Iannaco J, Quinn L., 2007) [8].

A 12-week intensive yoga program improved involuntary stress responses in 4th and 5th graders. Many students were eager to join the program, and a focus group showed that participants had a positive experience with the program. The intervention group’s survey responses showed significant improvements in involuntary stress responses as compared to controls ($p < .001$). Significant different were also seen on three subscales, including rumination, intrusive thoughts, and emotional arousal ($p < .01$). (Mendelson T, Greenberg, MT, Dariotis, JK, Gould, LF, Rhoades, BL, et al., 2010) [15].

In a small study, a 15-week program of yoga and relaxation training improved stress responses in preteens. Yoga. (Stueck M, Gloeckner N., 2005) [24].

Yoga training improved pulmonary function and exercise capacity in children and teens with asthma. (Jain SC, Rai L, Valecha A, Jha, 1991) [13]. Yoga may help to lower adult risk for type 2 diabetes, reduce cardio-metabolic risk factors, and increase exercise self-efficacy. (Yang K, Bernardo LM, Sereika SM, Conroy MB, Balk J, et al., 2009) [33]. Yoga may be beneficial in controlling weight, blood pressure, and mood. Yoga Type: Hatha and relaxation yoga. (Guarracino JL, Savino S, Edelstein S., 2006) [9].

Yoga improves cardiovascular endurance for African Americans who have suffered from heart failure. Yoga. (Pullen PR, Thompson WR, Benardot D, Brandon LJ, Mehta PK, et al., 2010) [19].

Conclusion

Yoga is not just physical effort but it is more than this. Yoga is to create harmony in the physical, psychological and spiritual aspect of the human being. Many researches shown that yoga can decrease inflammation, increase immune system, improves chronic health, it also reduce depression, stress and anxiety. It can be viewed as a reliable and safe form of complementary and alternative medicine today. Many studies proven that yoga has effective in enhancing quality of life. Regular yoga practice can improve our physical, mental and spiritual health, it increase our awareness about our body and mind. Yoga positively contributes to overall quality of life, it has helpful in ease stress and promote relaxation. Over time and with steadfast research, yoga will continue to be as an essential daily routine of our life. In the nutshell, we should identify the benefits of yoga in holistic development for years to come.

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