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Effects of yoga on mental and physical health

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Abstract

In the last years, a new view on mental healthcare has been formed on mental healthcare, called positive psychology. This new view states, that mental health is not solely comprised of a reduction of negative symptoms, such as stress or depression, but positive experiences as well, such as emotional well-being, happiness and self-realization. Yoga, among other activities, is in line with this new view, in the sense that it practices key aspects of positive psychology. More and more research has been conducted on the effects of yoga on mental health in the last years, but little have physical, chronic conditions been the focus of this research. In the form of a master thesis, a meta-analysis is conducted to study the effects of yoga on mental health in physical, chronic conditions.

Keywords: Yoga, patanjali, pranayama

1. Introduction

Yoga originated in India several thousand years ago as a system of physical and spiritual practices. It was formalized in the second century BC in the form of the Yoga Sutras, attributed to the scholar Patanjali. The word 'yoga' means 'union' or 'yoke' or 'joining'. Originally, yoga was a method for joining a regular imperfect human being with the divine principle, or God. It is aimed to unite the mind, the body and the spirit. Through the practice of yoga, the mind can be trained to relax through deep breathing and become focused while holding the breath. This practice will lead to control of the mind. Doing yoga, not just the physical portion, but also immersing oneself on to the mental aspect of it, can help improve mental health. Yogis (those who do yoga) believe that yoga can reduce, and eventually prevent, the build-up of repressed emotions in the mind. The process is gradual but the effects, if yoga continues to be practiced, are lasting. "Yoga is a very effective stress reduction and relaxation tool. Performance of various postures requires the tensing and stretching and then relaxing of muscle groups and joints, which effectively produces relaxation in much the same way that a massage does. Yoga practice also draws attention towards breathing, which produces a meditative and soothing state of mind", says Mark Dombeck, Ph.D

2. Yoga and Mental Health

2.1 Regulates your adrenal glands

Yoga lowers cortisol levels. If that doesn't sound like much, consider this. Normally, the adrenal glands secrete cortisol in response to an acute crisis, which temporarily boosts immune function. If your cortisol levels stay high even after the crisis, they can compromise the immune system. Temporary boosts of cortisol help with long-term memory, but chronically high levels undermine memory and may lead to permanent changes in the brain. Additionally, excessive cortisol has been linked with major depression, osteoporosis (it extracts calcium and other minerals from bones and interferes with the laying down of new bone), high blood pressure, and insulin resistance. In rats, high cortisol levels lead to what researchers call "food-seeking behavior" (the kind that drives you to eat when you're upset, angry, or stressed). The body takes those extra calories and distributes them as fat in the abdomen, contributing to weight gain and the risk of diabetes and heart attack.

2.2 Increases your self-esteem

Many of us suffer from chronic low self-esteem. If you handle this negatively-take drugs, overeat, work too hard, sleep around-you may pay the price in poorer health physically,

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mentally, and spiritually. If you take a positive approach and practice yoga, you'll sense, initially in brief glimpses and later in more sustained views, that you're worthwhile or, as yogic philosophy teaches, that you are a manifestation of the Divine. If you practice regularly with an intention of self-examination and betterment—not just as a substitute for an aerobics class—you can access a different side of yourself. You'll experience feelings of gratitude, empathy, and forgiveness, as well as a sense that you're part of something bigger. While better health is not the goal of spirituality, it's often a by-product, as documented by repeated scientific studies.

2.3 Gives you peace of mind

Yoga quiets the fluctuations of the mind, according to Patanjali's Yoga Sutra. In other words, it slows down the mental loops of frustration, regret, anger, fear, and desire that can cause stress. And since stress is implicated in so many health problems—from migraines and insomnia to lupus, MS, eczema, high blood pressure, and heart attacks—if you learn to quiet your mind, you'll be likely to live longer and healthier.

2.4 Boosts your immune system functionality

Asana and pranayama probably improve immune function, but, so far, meditation has the strongest scientific support in this area. It appears to have a beneficial effect on the functioning of the immune system, boosting it when needed (for example, raising antibody levels in response to a vaccine) and lowering it when needed (for instance, mitigating an inappropriately aggressive immune function in an autoimmune disease like psoriasis).

2.5 Releases tension in your limbs

Do you ever notice yourself holding the telephone or a steering wheel with a death grip or scrunching your face when staring at a computer screen? These unconscious habits can lead to chronic tension, muscle fatigue, and soreness in the wrists, arms, shoulders, neck, and face, which can increase stress and worsen your mood. As you practice yoga, you begin to notice where you hold tension: It might be in your tongue, your eyes, or the muscles of your face and neck. If you simply tune in, you may be able to release some tension in the tongue and eyes. With bigger muscles like the quadriceps, trapezius, and buttocks, it may take years of practice to learn how to relax them.

2.6 Maintains your nervous system

Some advanced yogis can control their bodies in extraordinary ways, many of which are mediated by the nervous system. Scientists have monitored yogis who could induce unusual heart rhythms, generate specific brain-wave patterns, and, using a meditation technique, raise the temperature of their hands by 15 degrees Fahrenheit. If they can use yoga to do that, perhaps you could learn to improve blood flow to your pelvis if you're trying to get pregnant or induce relaxation when you're having trouble falling asleep.

3. Yoga and Physical Fitness

3.1 Improves your flexibility

Improved flexibility is one of the first and most obvious benefits of yoga. During your first class, you probably won't be able to touch your toes, never mind do a backbend. But if you stick with it, you'll notice a gradual loosening, and eventually, seemingly impossible poses will become possible. You'll also probably notice that aches and pains start to disappear. That's no coincidence. Tight hips can strain the knee joint due to improper alignment of the thigh and

shinbones. Tight hamstrings can lead to a flattening of the lumbar spine, which can cause back pain. And inflexibility in muscles and connective tissue, such as fascia and ligaments, can cause poor posture.

3.2 Perfects your posture

Your head is like a bowling ball—big, round, and heavy. When it's balanced directly over an erect spine, it takes much less work for your neck and back muscles to support it. Move it several inches forward, however, and you start to strain those muscles. Hold up that forward-leaning bowling ball for eight or 12 hours a day and it's no wonder you're tired. And fatigue might not be your only problem. Poor posture can cause back, neck, and other muscle and joint problems. As you slump, your body may compensate by flattening the normal inward curves in your neck and lower back. This can cause pain and degenerative arthritis of the spine.

3.3 Ups your heart rate

When you regularly get your heart rate into the aerobic range, you lower your risk of heart attack and can relieve depression. While not all yoga is aerobic, if you do it vigorously or take flow or Ashtanga classes, it can boost your heart rate into the aerobic range. But even yoga exercises that don't get your heart rate up that high can improve cardiovascular conditioning. Studies have found that yoga practice lowers the resting heart rate, increases endurance, and can improve your maximum uptake of oxygen during exercise—all reflections of improved aerobic conditioning. One study found that subjects who were taught only pranayama could do more exercise with less oxygen.

3.4 Drops your blood pressure

If you've got high blood pressure, you might benefit from yoga. Two studies of people with hypertension, published in the British medical journal *The Lancet*, compared the effects of Savasana (Corpse Pose) with simply lying on a couch. After three months, Savasana was associated with a 26-point drop in systolic blood pressure (the top number) and a 15-point drop in diastolic blood pressure (the bottom number—and the higher the initial blood pressure, the bigger the drop).

4. Conclusions

Yoga affects every cell of the body. It brings about better neuron-effectors communication, improves strength of the body, increases the optimum functioning of all organ-systems, increases resistance against stress and diseases and brings tranquility, balance, positive attitude and equanimity in the practitioner which makes him lead a purposeful and healthier life.

5. Discussion

Yoga is an ancient discipline of body, mind, and spirit that has been Westernized and practiced for its health benefits, similar to alternative medicinal (herbal) treatments, as a complement to more conventional medical therapy. Hatha Yoga, through holding static physical postures (*asanas*), uses stretching and improves muscular strength and flexibility so that it would likely be beneficial for some musculoskeletal problems (Luskin *et al.*, 2000) ^[12]. In fact, two limited studies of yoga in osteoarthritis of the hand and carpal tunnel syndrome show greater improvement in pain than in control groups. In combination with breath control, which adds additional neuromuscular effects, Hatha Yoga has provided some limited benefit in other musculoskeletal-related pain management, especially back pain and in the management of multiple

sclerosis These recent findings should not be surprising because yoga postures have been utilized in most athletic programs throughout Western societies for many years to both prevent and treat musculoskeletal injuries. Interestingly, anecdotal reports from non-Western societies where yoga posturing has been used instinctively by native populations for sitting and sleeping, find relatively few musculoskeletal problems (e.g., lower back pain and joint stiffness). Through body- and breath-control, including relaxation techniques, Hatha Yoga clearly has additional benefits for cardiopulmonary endurance in healthy people Kona *et al.*, 2000^[8] Tells *et al.*, 2000^[12]; Yadav and Das, (e.g., increased CO₂) that is produced by a change in the chemo reflex threshold Yoga breathing while performing postures, especially relaxation postures (e.g., *Savasana*), also has been shown to significantly reverse the physiologic effects of stress (i.e., increased HR, fib, and BP). Some of these physiological benefits are possibly self-controlled (i.e., psychologic); however, there are data in healthy subjects Selvamurthy *et al.*, 1998^[17] showing that yoga breathing techniques have effects on the autonomic nervous system as well (Rub *et al.*, in preparation). It is likely that the yoga practices of controlling body, mind, and spirit combine to provide useful Psychophysiological effects for healthy people and for people compromised by musculoskeletal and cardiopulmonary disease. No effects of yoga practices, on the other hand, have been shown convincingly for diseases such as chronic tinnitus (Kroner-Hedwig *et al.*, 1995)^[9] or epilepsy that do not have neuromuscular or neurovascular involvement. Further studies, therefore are needed to confirm the cellular and psychophysiological effects of Hatha Yoga.

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