



Review Article

THE ROLE OF HATHA YOGA IN HUMAN IMMUNO DEFICIENCY VIRUS (HIV)/ACQUIRED IMMUNO DEFICIENCY SYNDROME (AIDS)

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ABSTRACT

The Acquired Immuno Deficiency Syndrome (AIDS) considered to be great deal of courage to face the disease that seems to have no cure as yet. Many of the people living with HIV (PLHIV), have the intense feelings of hopelessness, loneliness, fear, anxiety and depression. The Highly Active Anti Retroviral Therapy (HAART) has effectively reduced HIV related morbidity and mortality for PLHIV. Even they are living longer with ART, but significant side-effects like anorexia, nausea, vomiting, fatigue and stress related problems are unavoidable. The National Institute of Health and World Health Organization recommends that, yoga makes to minimize the side effects of ART and stress related problems of PLHIV. Among many branches of yoga, *Hatha yoga* enhances the capacity of the physical body through the use of series body postures, movements (*Asanas*) and breathing techniques (*Pranayama*). It's a form of mind-body fitness that involves the combination of muscular activity and an internally focus on the mind for awareness of the self, breath and energy aids to boost immunity and relax the mind. Many research studies supported that, this behavior modification of yoga is potentially safe, effective and this low-cost management help to 'detoxify' the body, mitigate chronic fatigue, enhance endurance, improve organ and immune functions makes to enhance overall well being and quality of life of PLHIV.

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INTRODUCTION

Globally, an estimated 35 million people are living with Human Immunodeficiency Virus (*HIV*) is a hazardous entity to human beings. In the account of 2.5 million people living with HIV and AIDS (*PLHIV*) in India. Only Anti-retro viral therapies have brought renewed hope for many of the people living with HIV.^[1] But the ART adherence rate and the life expectancy or quality of life improvement in PLHIV is affected due to the negative lifestyle such as addictions, intake of unhealthy foods and sedentary lifestyle such as behavioral problems like anxiety, phobia etc., By altering the lifestyle and behavioral changes, the life expectancy of PLHIV can be improved.^[2] In western world, now yoga regarded as a holistic approach for health. The National Institute of Health is classified Yoga as a form of Complementary and Alternative Medicine (*CAM*) for HIV/AIDS. Recent surveys estimate that 47-74% of HIV infected individuals in the United States have used some form of alternative/complementary therapy to improve general

health and well being^[3]. *Yoga* has a important role to play in the rehabilitative efforts for many people living with HIV/AIDS^[4]

WHAT IS YOGA?

The yoga, is derived from Sanskrit word "*yu*" means "to control" or "to yoke" and is often termed as "uniting" or a method of discipline. The Indian sage *Patanjali* have elaborated the practice of yoga into the *Yoga Sutra* an estimated 2,000 years ago. He outlines the eight limbs of yoga (*Ashtanga Yoga*). They are *Yama* (universal ethics), *Niyama* (individual ethics), *Asana* (physical postures), *Pranayama* (breath control), *Pratyahara* (strengthening senses), *Dharana* (concentration), *Dyana* (meditation), and *Samadhi* (self realization).

Among these eight limbs, today many people practicing third and fourth limb of *Ashtanga yoga*. The word "*asana*" refers to pose or posture, its helps to

increase stamina, physical power and as well as designed to purify the body. The *Asanas* are aids to open the many channels of the body especially the spine, so that energy flow in our body to go freely. Its increase concentration of our breath (*Prana*), which helps us to connect the body-mind.^[5]

THE MIND - BODY CONNECTION

Asana and *Prana* are important concepts in the *Hatha Yoga*. The word *Hatha* means wilful or forceful. *Hatha yoga* is a kind of physical exercises, and series of asana, aids to align our skin, muscles, and bones. The word *Hatha* is derived from two roots - *ha* means 'sun' - has masculine aspects of hot, active and *tha* means "moon" - has feminine aspects of cool and receptive. The two energies of '*Ha*' and '*Tha*' make us to get powerful tool for self-transformation. The thoughtful feature of yoga is regularly achieved through an individual's intellectual focus of the asana and *Prana*.^[6]

Yoga is unique because it connect the movement of the body and the fluctuations of the mind to the rhythm of our breath. The relation between mind, body, and breath helps us to sharp our concentration inward. Through this process of hidden attention, learn to be aware of our habitual thought patterns without tagging them, judging them, or annoying to change them. The aware of experiences from moment to moment cultivate through a daily practice of yoga, makes a task or a goal to be completed.^[7]

HIV AND YOGA

Yoga is an ideal exercise for people with HIV. Yoga consists of three parts: exercise, breathing, and meditation. The yoga exercises are easy movements that extend and toughen the nervous system, main muscle groups, compress on glands and organs to motivate the hormonal system, to progress circulation in body. It's makes our brain and all vital organs receive oxygenated blood and nutrients. A habitual perform of a yoga exercises will increase our energy levels and feelings of happiness. The breathing exercises are most excellent tool for handle with stress and anxiety. By concentrating simply on the movements of the breath, build concentration, willpower, and the ability to reduce the hurtful possessions of a stress reaction. The different methods of breathing exercises increase the system to all the respiratory muscles and improve vital capacity. There's been ample research showing that both yoga and meditation elicit the relaxation response, regulates breath, heart rate and improves immunity power.^[8]

Jon Kaiser (1998) said that, "Healing comes from inside". He strongly recommends that PLHIV take time to practice deep relaxation daily. Yoga makes to relieves stress, peace the mind, and regulates breathing and circulation. A regular practice can aid to sustain the immune system in concurrence with a comprehensive HIV management program.^[9] Chapel Hill (2008) reported that stress significantly increases the hazard of HIV will progress to AIDS.^[10] Steve Cole (2010) said that HIV is an tremendously stressful disease equally during the period of adjusting as well as living with it and because of the medications side effects. HIV spread more rapidly in

presence of nor-epinephrine (stress hormone) in the body, make "T" cells more vulnerable to attack and can increase the HIV rate of the reproduction 10 fold. And also he found that, ARV medications are less effective in people with high levels of nor epinephrine and people with HIV face treatment options that can range from uncomfortable (including sleeplessness and nausea) to dangerous (for example, increased risk of heart attack). "That's why behavioral interventions, like yoga and meditation, are so important," for PLHIV.^[11]

Misha Cohen (2010) reported that, Yoga is superb tool for the stress decline when done appropriately," it can help to relieve various symptoms, as well as the ARV medications side effects, including the digestive problems and the joints pain. "A regular yoga practice is a simple way to achieve the good strength, boost the immune system and enhance circulation always".^[12] Joseph and Nair (2015) evaluated the effect of naturopathy and yoga intervention on CD4 counts of HIV/AIDS patients. He observed that, an increasing trend in the CD4 count was proportional to the participants following yoga intervention. This indicates the possibility of lifestyle changes can bring positive outcomes in people living with HIV/AIDS.^[13]

Naoroibam and Metri (2016) identified through the randomized control trial, One month practice of Integrated Yoga practice (*Asana, Pranyama* and relaxation technique) may reduce depression and improve immunity in HIV-1 infected individuals in experimental group when compare to the control group.^[14]

HIV/AIDS makes a grand deal to face a disease that seems to have no heal as yet. The most people with HIV experience extreme feelings of despair, loneliness, fear, anxiety, and depression. Yoga cannot replace the professional counselling in connection with major grief, but yoga techniques can help to ease extreme fear and anxiety, gain knowledge of stress-coping skills, and fabricate the internal strength through the relaxation and self-awareness exercise of the meditation. Yoga helps to train the most of the physical capabilities, a slow-paced version that can emphasis for extends of flexibility and breathing techniques that helps in relaxation.^[15]

The goal of yoga for HIV/AIDS is to

- ❖ Strengthens the immune system.
- ❖ Diminish the Opportunistic infections
- ❖ Improves nutritional status.
- ❖ Provides relief from symptoms and drug side effects.
- ❖ Improve quality of life and increase the life span.
- ❖ Possibly reduces transmission of HIV to others in future.^[16]

RECOMMENAND ASANA AND ITS MECHANISM

Yoga has many amazing effects of PLHIV, leading to greater levels of physical fitness, improves immunity, lower levels of stress and a greater sense of inner peace. Worldwide, it is estimated that yoga is regularly practiced by about 30 million people. The Yoga vidya Gurukul University, Washington University and many research institutions recommends that these following

Asanas are beneficial for PLHIV. Depending upon the advice of a doctor, yoga techniques for HIV and AIDS are viable option. [17-22]

1. Yoga keeps the body clean, flexible and well balanced by decreasing the catabolic process of cell deterioration.
2. Asana Safely stretches the muscles, release the lactic acid that builds up the muscle use and increase the range of motion in the joints. Ex- *Vriksasana* (Tree Pose) and Sun Salutations.
3. **Forward pose:** Associated with Chest compression, exhalation and induces relaxation. It redirects the blood, energy flow to thymus its helps to regulate, control the 'T' cells and produces the hormones thymosins. Thymosins regulate white blood cells, particularly T-cells, control other hormones. Ex- *Trikonasana* (Trianglepose), *Vajrasana* (Thunderbolt Pose), *Yoga mudra*, *Paschimottasana* (sitting forward), *Uttanasana* (Standing Forward Bend), *Ardha Uttanasana* (Standing Half Forward).
4. **Back Bend pose:** It stretches abdominal muscles, tone and strengthen the muscles in Controlling spine, open up the chest, improve performance of the thymus gland and increase the immunity. e.g. *Bhujangasana* (Cobrapose), *Ushtrasana* (Camel pose) *Matsyasana* (Fish pose) *Supta Baddha Konasana* (Reclining Bound Angle Pose). *Setu Bandha Sarvangasana* (Supported Bridge Pose), *Supta Virasana* (Reclining Hero Pose) and *Viparita Karani* (Legs-up-the-Wall Pose).
5. **Spinal Twisting Asana:** The twist stimulates the spinal nerves and makes the spinal column more flexible. The whole trunk exercises enhance circulation in spine and strongly influence the abdominal muscles. e.g. *Vakrasana*, *Ardha matyendrasana* (Half spinal twist pose).
6. **Inverted Asana:** Encourage the rich supply of blood to flow to the brain, nourishing the neurons and rush out toxins. The accumulated blood and lymph, in lower limbs and abdomen are again go back to the heart and then purified by the lungs and re-circulated to whole parts of the body. E.g. *Sirsasana* (Headstand), *Sarvangasana* (Shoulder stand) *Halasana* (Plow Pose) and *Pincha mayurasana* (Feathered Peacock Pose).
7. **Relaxation pose:** Stress suppress levels of the infection fighting cells and immunity boosting gamma interferon in the blood. The yoga inhibits the release of stress hormone (nor-epinephrine, cortisol) and increase the relaxation efforts by stimulation of good chemicals such as serotonin and cytokines. e.g. *Sukhasana* (Simple cross leg pose), *Padmasana* (lotus pose), *Tadagasana* (pond pose), *Makrasana* (Corcodile pose) *Shanthiasana* (corpse pose) includes Instant relaxation technique (IRT), Quick relaxation technique (QRT), and Deep relaxation Technique (DRT).
8. **Pranayama:** *Prana* begins to store the energy, allowing toxins to be released and removed. It

directs the movements of inspiration, expiration and the retention of vital energy. Yogic breathing of *Pranayama*, is a unique method for balancing the autonomic nervous system and influencing psychological and stress-related disorders. *Sudarshan kriya yoga* (SKY) is a type of cyclical controlled breathing practice that provides relief for depression and favourable effects on the mind-body system. The *Nadi sodhana pranayama* (Alternate nostril breathing) reduces the stress level has soothing result on the nervous system. The absolute yogic respiration of abdominal, thoracic, and clavicular methods, increase the vital capacity of lungs. Fluctuations of mind can be minimized by practices like *Trataka* (concentration on a point or object) When practice *Pranayama* sit in *Sukhasana*, *Padmasana*, or *Vajrasana* posture and better to close the eyes, helps to increase the concentration and relax the mind.

The goals of yoga will be achieved more in adolescent age when compare to other age groups living with HIV/AIDS. Anitha Menon *et al.*, (2013) and many research studies are found that adolescents are the most vulnerable group to get and spread HIV/AIDS in the community. About 31% of HIV prevalence in India is among the adolescent between age group of 10- 24years. The regular practice of yoga will promote the health, to develop positive attitudes and health practices, improve self confidence of adolescents living with HIV /AIDS which prevents HIV transmission in future. [23]

BENEFITS OF ASANAS [24,25]

✓ **Physical**

- Improves body flexibility and balance
- Increase the cardiovascular endurance (stronger heart)
- Ease the digestion power
- Enhance the overall muscular strength
- Relaxation of the muscular strains
- Progress the respiratory functions
- Increase the energy levels
- To develop good sleep patterns
- To boost immune system

✓ **Mental**

- Relieves the stress resulting from the control of emotions
- Prevents and relieves from stress-related disorders
- Intellectual enhancement, leading to improved decision-making skills

✓ **Spiritual**

- Life with meaning, purpose, and direction
- Inner peace and tranquillity
- Contentment

CONCLUSION

Anti-retro viral therapies have brought rehabilitated trust for many of the people living with HIV. However, they do not offer cure, and they can cause

many side effects and other non adherence reasons, more than 70% of HIV-positive people have turned to alternative medicine for help along with HARRT regimen. Now Over all yoga, acts both as curative and preventive therapy for the minor ailments in PLHIV. In fact many researchers have reported that, reducing stress appears to be a key asset for supporting people with HIV virus. Today yoga has become popularity in therapeutic practice; nearly stress reduction in people with HIV can contributes longevity and improves health. Regular yoga practices along with adherence to HARRT regimen leads to enhance overall well being with less burden to the society for PLHIV.

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