

Yoga for Psychological Rehabilitation: An Overview

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Abstract

The psychological changes associated with yoga practice, allow yoga to be used in therapy and rehabilitation. In the present overview only the psychological aspects of rehabilitation have discussed. Applications have been reported in children with attention deficit hyperactive disorder as an add-on therapy, particularly towards evening when the effects of medication reduce. Another recent application is in promotion of healthy aging. Healthy older persons who practiced yoga had improved sleep, better gait and balance, and less chance of depression, compared to those who did not practice yoga. In mentally challenged persons yoga showed better motor co-ordination, general mental ability, social adjustment and improved central neural processing ability. Another application of yoga which has been studied is post-traumatic stress disorder for survivors of natural disasters, with studies cited about benefits observed in survivors of a tsunami and a flood. Apart from this, yoga therapy resulted in improved perceived quality of life in physical and psychological domains as well as improved postural stability in patients with schizophrenia. The evidence showed that yoga plays an important role to overcome drug addiction at both pre and post clinical stages and it helps individuals to decrease drug dependency and other associated problems. More recent studies have made it apparent that there is no evidence that yoga is beneficial for persons who are HIV positive or those with AIDS. Hence it is apparent that there are several diverse applications of yoga in rehabilitation. Considerable research is still required to verify claims made and understand mechanisms underlying benefits seen.

Keywords: Yoga, Rehabilitation, Psychological aspects

Introduction:

The word rehabilitation is derived from Latin (*rehabilitare*) and means ‘to make fit again’. Yoga has been used to help restore function, health and dignity to groups with special needs. Apart from this, yoga has several applications in rehabilitation [1]. Yoga practice can also play an important role in the rehabilitation of physically and mentally handicapped persons, as well as those who are socially disadvantaged [2]. The present article is limited to yoga in psychological rehabilitations. The studies related to complex medical conditions such as dementia, oncological conditions were left out in this article as they are beyond the scope of this report.

Psychological changes with yoga in the following groups

2.1 Children with attention deficit hyperactivity disorder (ADHD)

Attention deficit hyperactivity disorder is a condition associated with various behavioral and social problems. Boys diagnosed with ADHD were assigned to a yoga group and a non-yoga control group [3]. The yoga group had twenty sessions of yoga in a yoga class and then practiced at home. The results suggested that yoga can help children with ADHD particularly towards the evening, as the benefits of medication reduce. Another study compared yoga with conventional motor training and found that yoga was superior

with respect to performance in an attention task and the way the parents rated the children's behavior [4]. Hence though ADHD is difficult to treat, yoga can be considered for the management of ADHD as an add-on therapy.

2.2 Psychological aspects of aging

The number of healthy older people is increasing. As many of these individuals do not have any diagnosed illness they are neglected by clinicians even though they do have complaints assumed to be a part of normal aging [5].

A three-arm randomized controlled trial (where the three arms were yoga, ayurveda and wait list control), assessed the self-rated sleep in sixty-nine older adults randomized as the three groups [6]. The yoga group showed a significant decrease in the time taken to fall asleep, an increase in the total number of hours slept, and in the feeling of being rested in the morning. These benefits were observed after six months of yoga practice. The same group also showed an improvement in gait and balance after six months of yoga practice [7]. This is especially important as falls are associated with a high incidence of morbidity and even fatalities in older persons. Another benefit seen in the same groups when they practiced yoga for six months was a decrease in negative affect or depression, based on the Geriatric Depression Scale [8].

In a separate study on healthy seniors, one hundred and thirty-five healthy seniors were randomized as three groups, viz., yoga, walking exercise or control [9]. Outcome assessments included cognitive measures, assessments of the emotional state, and physical measures. Neither the yoga nor the exercise group showed improvements in cognitive function, however the yoga group showed a significant improvement in the quality of life and physical measures compared to the exercise and control groups.

In yet another study conducted on healthy older adults in Taiwan, the mental status and sleep quality were especially assessed [5]. Out of one hundred and thirty nine participants recruited, one hundred and twenty eight completed the trial. All participants were community dwelling adults aged 60 years or more. They were randomly assigned to a yoga and a non-yoga (control) group. After six months of yoga practice, their sleep quality, depression and mental health status improved.

In a study on sixty-nine elders, the practice of Silver yoga (SY) was found beneficial to improve physical fitness of frail elders [10]. In this quasi-experimental study participants were assigned randomly to the SY group or to the control group. After yoga intervention (three times per week, 70 minutes per session, for 24 weeks), the physical fitness indicators of participants in the SY group had improved significantly compared to participants in the control group. Silver yoga exercise also resulted in positive benefits in the physical as well as the mental health of elders with dementia [11].

Hence yoga is useful to promote healthy aging in older adults.

2.3 Persons who are HIV positive and those who have AIDS

People who are HIV positive are under physical, mental, emotional, social, and often economic stress [12]. Very few studies have demonstrated actual benefits of yoga practice in people who are HIV positive or who have AIDS.

An early study mentioned that unlike exercise which increases cortisol, which in turn causes muscle wasting, yoga reduces cortisol and hence yoga stretches were speculated to be useful to improve immune function while not causing muscle wasting in persons who are HIV positive [13]. A more recent randomized trial evaluated a

residential program designed to train participants in breathing, movement and meditation [14]. There were sixty-two participants, and forty-seven completed the trial. The short-term effect of the program were positive changes in well-being and mental health. However the long term benefits were less clear. This shows that yoga has the potential to manage people who are HIV positive. At present there are no studies to conclusively state that yoga helps in HIV positive persons or those with AIDS.

2.4 Mentally challenged persons

A rigorous trial was conducted in 1989 [15]. There were ninety children with mild to severe mental retardation. The study assessed the effects of yoga versus non-yoga in a control group over one year. Yoga practice included postures (*asanas*), breathing practices (*pranayamas*) and meditation. The yoga group showed better motor co-ordination, general mental ability, and social adjustment, compared to the group who did not practice yoga.

In another study on thirty-four mentally challenged adolescents, a significant decrease in visual and auditory reaction time was found following *mukha bhastrika* (a bellows type of *pranayama*) [16]. A decrease in reaction time signifies improved central neural processing ability.

2.5 Post-traumatic stress disorder (PTSD)

Following exposure to trauma people often develop high levels of fear and anxiety, and eventually a collection of symptoms called post-traumatic stress disorder (PTSD) [17]. The trauma could be exposure to violence (e.g., being a victim of a terrorist attack, a hijacking, an assault, and so on), as well as natural disasters, such as earthquakes. A week of yoga practice was useful to reduce self-rated fear, anxiety, sadness and disturbed sleep in survivors of the Indian Ocean tsunami which occurred in 2004 [18,19]. The

people were residents of the Andaman Islands, an archipelago in the Bay of Bengal. Apart from the self-rated reduced symptoms of distress, following yoga the survivors had lower heart and breath rates, suggesting a decrease in their stress levels [19]. While the tsunami was an unexpected natural disaster which had devastating effects, in many parts of the world natural disasters such as floods, cyclones and drought occur repeatedly. Yoga was also found to be helpful and possibly prevent development of post-traumatic stress disorders in survivors of floods which occurred in the north Indian state of Bihar [20]. This flood recurs year after year. The group who practiced yoga had reduced sadness, which is of importance as with recurring traumas people may develop depression. The non-yoga (control) group had increased anxiety. Since this did not happen in the yoga group, yoga practice may have prevented anxiety from increasing.

2.6 People with schizophrenia

There are limited studies related to yoga as a complementary treatment for schizophrenia. In a randomized controlled study, eighteen clinically stable patients with schizophrenia were randomized to an eight-week Yoga Therapy program (YT) and a Waitlist group (WL) [21]. YT intervention included yoga postures, breathing exercises, and relaxation. At baseline and at eight weeks, symptomatology was measured using the Positive and Negative Syndrome Scale (PANSS) and the secondary efficacy outcomes were measured with the World Health Organization Quality of Life BREF questionnaire (WHOQOL-BREF). After yoga, the YT group obtained significant improvements in positive and negative symptoms of schizophrenia compared to WL as well as YT had improved perceived quality of life in physical and psychological domains.

In another randomized controlled study, the beneficial effects of yoga therapy has been shown on postural stability in patients with schizophrenia [22]. In this eight-week study, forty-nine outpatients with schizophrenia were randomly assigned to either yoga therapy or a control group. In the yoga therapy group, the subjects received weekly sessions of 60-minute yoga therapy for eight weeks with their medicine while the control group received a weekly regular day-care program. The assessments included the Clinical Stabilometric Platform (CSP), anteflexion in standing. Significant improvements were observed in a total length of trunk motion, the Romberg ratio, and anteflexion in standing at week 8 in the yoga group.

Apart from this short term yoga has shown beneficial effects on the quality of life in patients with schizophrenia [23]. In a pilot study, forty participants with schizophrenia showed significantly decreased state anxiety, psychological stress and increased subjective well-being after single sessions of yoga and aerobic exercise compared to a no exercise control condition [24].

2.7 Substance abuse

Substance abuse, including the use of tobacco, alcohol and mental-state modifying drugs, has several medical and social consequences. Also, rehabilitation of people with addictions like these is very difficult to achieve. Yoga plays an important role to overcome drug addiction at both pre and post clinical stages and it helps individuals to decrease drug dependency and other associated problems [25]. Some of the studies described here in three categories are as:

2.7.1 Yoga and tobacco addiction

A rhythmic yoga breathing (*Sundarshan Kriya Yoga*) decreased use of tobacco in twenty-one percent of individuals after six months of practice [26]. Tobacco smoking

is the leading preventable cause of death among women in America [27].

2.7.2 Yoga and alcohol dependency

Alcoholism is a common cause of medical, social and economic problems [28]. A report found that three months of yoga practice, which included postures, breathing practices and meditation brought about significant psychological and biochemical changes in chronic alcoholics [29].

In a two-week study on sixty alcohol dependent individuals, participants were equally randomized as two groups, one group received *Sudarshan Kriya Yoga* (SKY) the other was a control group. The level of depression, morning plasma cortisol, ACTH and prolactin were measured before and at the end of two week. A significant reduction in depression scores and stress hormone level (plasma cortisol and ACTH) was found in the SKY group that indicates the beneficial effects of *Sudarshan Kriya Yoga* [30].

2.7.3 Yoga and other substance abuse

Following a ninety day residential Kundalini yoga lifestyle program in a pilot study, participants having substance abuse showed improvements on a number of psychological self-report questionnaires [31].

In a randomized controlled trial, seventy five Chinese women (having ages ranged between twenty and thirty seven years) undergoing heroin detoxification were randomly allocated to an intervention and a control group. Most of them had used heroin by injection. The intervention group received a 6-month yoga intervention with hospital routine care, and the control group received hospital routine care alone. Mood status and quality of life were assessed at baseline and following 3 and 6 months of treatment. The intervention group showed a significant improvement in mood status and quality of life over time compared with the women in the control group [32].

An early study which examined 1862 people who practiced Transcendental Meditation found that twenty months of the practice was useful in reducing addictive behavior [33]. Participants who were using a variety of drugs showed better inner control, mental resolve and reduced anxiety after meditation. Their consumption of marijuana, but not of other drugs reduced significantly.

Treatment with methadone has been used to reduce substance abuse and HIV infection among drug users [34]. Sixty-one persons with a history of substance abuse were randomly assigned to (i) conventional methadone treatment and (ii) alternative Hatha Yoga therapy [34]. After six months both groups showed psychological, sociological and biological changes, suggestive of reduced drug dependence. Apart from reduced drug use the participants showed lower criminal activities. This program looked at a combination of yoga

practices (such as postures, breathing exercises, and meditation).

Conclusions and limitations

Yoga practice has several applications in rehabilitation. Some of them which have been scientifically investigated are reported here. However there are many more which can and should be systematically assessed. The limitations of this overview are: (i) This is not a structured review. There is no attempt to critically analyze the methodology of the publications. It is an attempt to provide information in this area based on published studies. (ii) The search was limited to PubMed. Even though there are several other bibliographic databases which do cover this topic, PubMed is highly accessible and covers a wide range of topics. (iii) The overview is restricted to the psychological aspects of rehabilitation only.

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