

Effectiveness of Yoga Interventions on Psychological Well-being: Exploration of Yoga Studies on Mental Health

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ABSTRACT

Psychological well-being generally refers to the healthy functioning of mind in relation to emotions or feelings. Emotion is considered as any mental experience with high intensity and depth. Happiness, as an important marker of emotional well-being, is described as an emotional state of well-being defined by positive or pleasant emotions ranging from inner contentment to intense joy. Similarly, the satisfaction with life, as another strong indicator of psychological well-being, is one's own evaluation of life as a whole, rather than the feelings and emotions that are experienced in some specific moments. Psychological well-being was found to be associated with many spiritual factors. In ancient times, yoga was spiritually practiced for self-investigation, however people are giving more attention to mental and physical aspects of yoga in recent years. Yoga practices generally include physical postures, breathing practices, relaxation techniques, meditation techniques, chanting etc. Yoga improves physiological function, emotional state, sleep quality, and quality of life. Yoga practices were found to be effective techniques for improving overall health and psychological well-being. Yoga may improve psychological well-being via down-regulation of the sympathetic nervous system and hypothalamic-pituitary-adrenal axis. The objective of this review is to understand the impact of various yoga-based interventions on psychological well being in human subjects.

Keywords: *Emotion; Meditation; Mental Health; Psychological Well-being; Yoga.*

INTRODUCTION

Psychological well-being generally refers to the healthy functioning of mind in relation to emotions or feelings. Emotion is considered as any mental experience with high intensity and depth.¹ Experiences of any emotion are content-rich events that emerge at the level of psychological description, but must be causally constituted by neurobiological procedures.² Emotions can be positive or negative such as happiness, love, satisfaction, anger, sadness, dissatisfaction etc. Stress has a negative correlation with psychological well-being. Stress is described as a mental feeling of being unable to cope with emotional pressure. The stress response is triggered by the stress system, located in the central nervous system and peripheral organs.³ Positive emotions such as subjective happiness and the

satisfaction with life are considered to be the strong markers of psychological well-being.⁴ The objective of this narrative review is to understand the impact of various yoga-based interventions on psychological well-being in human subjects.

SUBJECTIVE HAPPINESS AND SATISFACTION WITH LIFE

Happiness is described as an emotional state of well-being defined by positive or pleasant emotions ranging from inner contentment to intense joy. Happy mental conditions may also indicate overall well-being of life and final goal for human beings.⁵ The level of happiness may be determined by many factors such as a genetically determined set point for happiness, happiness-relevant circumstances, and happiness-relevant activities and

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practices.⁶ Similarly, the satisfaction with life is one's own evaluation of life as a whole, rather than the feelings and emotions that are experienced in some specific moments. Satisfaction with life is a very strong indicator of psychological well-being.⁷ Subjective happiness was found to be associated with many spiritual factors as spiritual practices appeared to enhance mental health and quality of life of people.⁸ Spiritual people were also found to be more satisfied with their lives as compared to others.⁹

CONCEPT OF YOGA

Yoga is the spiritual process derived from the ancient eastern tradition. Yoga as a Sanskrit word means union or to unite; the union between individual consciousness and universal consciousness. The detailed science of yoga was presented by sage Patanjali in ancient yogic text Patanjali yoga sutra. According to Patanjali, yoga has eight limbs namely Yama (abstinences), Niyama (observances), Asana (physical postures), Pranayama (breath regulation), Pratyahara (withdrawal of the senses), Dharana (concentration), Dhyana (meditation), and Samadhi (absorption), however, the Asana, Pranayama and Dhyana have been employed commonly for therapeutic purposes nowadays.¹⁰ In ancient time, yoga was spiritually practiced for self-investigation, however people are giving more attention to mental and physical aspects of yoga in recent years.¹¹ Yoga practices generally include physical postures, breathing practices, relaxation techniques, meditation techniques, chanting etc. The major goals of yoga are mind body balance, defocused awareness and the sense of harmony with life and universe.¹² It is considered that yoga is a psychological, physical, and spiritual sciences for the holistic growth of the human body, mind and soul.¹²

ROLE OF YOGA ON PSYCHOLOGICAL WELL-BEING

Yoga was found to be beneficial for various populations including elderly and those with chronic medical illnesses.¹⁴ Yogic practices are considered to be effective techniques for improving overall health and quality of life.¹⁵ However, yogic practices have stronger evidence to be effective in mental health as compared to physical health. Yoga has great benefits in terms of improved physiological function, enhanced mental and emotional state, better sleep quality, and improved lifestyle, and it is useful as a health promotion strategy in the prevention and management of chronic diseases.¹⁶ The yogic practices including meditation, breathing techniques, and relaxing postures help individuals to deal with the emotional aspects of chronic pain, reduce anxiety and depression and improve the quality of life.¹⁷ An integrated approach of yoga therapy (IAYT) has been proved to be

better than therapeutic exercises in improving quality of life.¹⁸ Further, the role of yoga practices in improving the mental and general health of HIV positive persons and patients with AIDS, was also demonstrated.¹⁹

Several studies have demonstrated the effectiveness of yoga practices on psychological well-being. In a study, emotion regulation increased significantly in the yoga group after 15 weeks intervention as compared to the physical exercise group.²⁰ Another study demonstrated that Maharishi yoga postures increased happiness significantly and affected both body and mind.²¹ Similarly, a significant improvement in life satisfaction and core self-evaluation was found in another study.²² Further, a 6-week yoga practice was found to be effective in increasing the positive affect and reducing negative affect.²³ A six months practice of yoga also appeared to be effective in improving women's psychological well-being and functioning.²⁴ Similarly, one week integrated yoga practices reduced the negative emotions and increased the positive emotions.²⁵ Studies also demonstrated that yoga practices reduced anxiety, depression and pregnancy related uncomfortable experiences in women.²⁶ Further, three month yoga therapy was effective on anxiety disorders, quality of life and psychological well-being.²⁷ Furthermore, only single session of laughter yoga appeared to be effective in improving subjective well-being temporarily.²⁸

As an essential part of yoga, meditation was also found to be effective in improving the overall health of human being.²⁹ Different kinds of meditation interventions had positive effect on psychological well-being.³⁰ Many techniques of meditation are the potential pathways for studying mind-body interactions. Meditative practices were also found to be effective in improving immune and cardiovascular functioning and pain perception. Meditation driven improvements in cognitive and emotional processes are the causes of improvements in physical health. Hence, meditation is a powerful technique for generating new knowledge of mind-body interactions.³¹ Meditation practices play a substantive role in many spiritual, religious and psychological factors, and manage psychological symptoms such as stress, anxiety and depression.³² Meditation techniques bring the deep trance state of mind in a single common basis for relaxation, hypnosis and mental imagery. Meditation also has beneficial effect on the mind of various psychopathological patients.³³ Meditation is connected with many physiological and psychological factors.³⁴ Meditation was found to be effective in improving mental health measures of young adult population especially in the areas of anxiety, and this effect seems to be independent of age, gender and marital status.³⁵ Meditative techniques also enhance positive affect and decrease the score of negative affect.³⁶

Table 1. Important Studies on Yoga for Psychological Well-being

S. N.	Authors & Year	Sample	Design	Assessment Tools	Variables	Intervention	Results	Conclusion
1	Daly et al., 2015	37 High School Students	Randomized Controlled Trial	Emotion regulation was assessed with the Emotion Regulation Index for Children and Adolescents	Emotion regulation	16 week yoga intervention and Physical exercise	Significant increase in emotion regulation in the yoga group [F (1,32) = 7.50, p = 0.01, and eta ² = .19]	Emotion regulation increased significantly in the yoga group as compared to the PE group. No significant relationship was discovered between emotion regulation and the proposed mediating variables. ²⁰
2	Gobec & Travis, 2018	13 college students	Pre-post Design	profile of mood states (POMS)	Mood states, Happiness,	4 week Maharishi Yoga postures	Significant increase in happiness during the day and significant improvements in sense of personal self and transpersonal qualities	Maharishi Yoga postures increased happiness significantly and affected both body and mind. ²¹
3	Prasad et al., 2016	A total of 13 women & 14 men	prospective case-control study	Perceived stress scale (PSS) and self-assessment surveys (SAS)	Happiness, Positivity, Personal satisfaction, Stress, Personal well being	1 hour session per week of yoga & meditation for 6 weeks	Significant improvement in feelings of peace, focus, endurance, happiness, positivity, personal satisfaction, and self-confidence	6 weeks of yoga & meditation reduced stress & improved aspects of personal well-being. ³⁷
4	Rissell et al., 2014	Twenty-two subjects	Pre-post Design	Core self-evaluation (CSE)	psychological well-being	A 60-day Bikram yoga	Significant improvement in Life satisfaction and CSE score	Life satisfaction and CSE each improved over the course of the 60-day intervention. ²²
5	Mahalingam et al., 2015	83 under graduate student nurses	Pre-post Design	Hindi version of Positive Affect and Negative affect scale, (PANAS-H)	Psychological Well-being, Positive and Negative affect	6-week yoga practices, one hour per day, three days a week	Significant increase in positive affect after six months of intervention	6-week practice increase the positive affect and reduced negative affect. ²³
6	Narayana & Gopal, 2008	44 women who practiced yoga, 36 who did not practice.	Two Group Pre-post Design	Psychological Wellbeing Scale	Psychological well-being and functioning	Yoga practices for six month	Significant increase in psychological well-being and functioning	Practice of Yoga improved women's psychological well-being and functioning. ²⁴
7	Nathawat & Gupta, 2011	15 men and 15 women	Four Groups Pre-post Design	Psychological Well-being	Positive & Negative Affect, Satisfaction with Life and Self-esteem	Different meditative techniques (Transcendental Meditation, Vipassana & Yoga)	Significant increase in positive affect and decreased in negative Affect	Meditative techniques enhanced score of positive affect and decreased the score of negative affect. ³⁶

S. N.	Authors & Year	Sample	Design	Assessment Tools	Variables	Intervention	Results	Conclusion
8	Narasimhan et al., 2011	450 healthy volunteers	Open-armed observational study	Positive Affect Negative Affect Scale (PANAS)	positive affect (PA), negative affect (NA), other positive affect (OPA) and other negative affect (ONA)	Integrated yoga for one week	Significant increase in PA of PANAS by 13% (P<0.001), and OPA by 17% (P<0.001). The NA reduced by 47% (P<0.001) and ONA by 48% (P<0.001)	Integrated yoga practices reduced the negative emotions and increased the positive emotions. ²⁵
9	Telles et al., 2013	98 school children (8 to 13 years). Yoga (49) and physical exercise groups (49)	Randomized Controlled Trial	Stroop colour and word test, Battle's self-esteem questionnaire	Cognition, self-esteem	45 minutes yoga or physical exercise each day, 5 days a week for 3 months	Significant improvement in total, general and parental self-esteem in the yoga group (p < 0.05).	In the Stroop task both groups showed improved colour, word- and colour-word naming, while the physical exercise group showed higher interference scores. ³⁸
10	Satyapriya et al., 2013	Yoga group (n=51) practiced integrated yoga and control group (n=45) did exercises	Prospective Randomized control study	Hospital Anxiety and Depression Scale, State and Trait Anxiety Index	anxiety, Depression & Well-being	Integrated yoga or exercises, one hour daily, from 20th to 36th week of gestation	State anxiety decreased by 15.65%, Trait anxiety decreased by 8.97% and Depression decreased by 30.67%	Yoga practices reduced anxiety, depression and pregnancy related uncomfortable experiences. ²⁶
11	Anna-poorna et al., 2013	50 subjects with anxiety disorders	Pre-post Design	Psychological General Well-Being Schedule scale, Satisfaction with Life Scale	Psychological wellbeing and Quality of life	45 minutes yoga therapy, once a day for 3 months	Significant improvement in anxiety disorders, quality of life and psychological well-being.	Three month yoga therapy was effective on anxiety disorders, quality of life and psychological well-being. ²⁷
12	Weinberg et al., 2013	Forty-four participant (Mean age, 58.86± 14.12)	Pre-post Design	General Life Satisfaction (GLS), Subjective Well-being (SWB)	Subjective well-being	Single session of Laughter yoga	Significant increase in subjective well-being	Single session of Laughter yoga increased subjective well-being temporarily. ²⁸

DISCUSSION

Yoga practices have demonstrated great benefits in terms of improved physiological function, enhanced mental and emotional state, better sleep quality, and improved lifestyle.¹⁶ Yoga practices are also considered to be effective techniques for improving overall health and quality of life.¹⁵ There are several evidences of therapeutic benefits of yoga practices for anxiety, depression, dysthymia, obsessive compulsive disorder, alcohol dependence syndrome and cognitive symptoms of schizophrenia. The yoga practices not only serve as a prevention and cure of mental disorders but

also results in psychological well-being.³⁹ Yoga may improve psychological well-being via down-regulation of the sympathetic nervous system and hypothalamic-pituitary-adrenal axis.⁴⁰ The components such as mindfulness and relaxation in yoga may be the major reasons for the down-regulation of sympathetic nervous system and hypothalamic-pituitary-adrenal axis. Psychological well-being related to mindfulness was found to be associated with enhancements in mechanisms supporting cognitive control, emotion regulation, positive mood, and acceptance.⁴¹

Mindfulness was also found to be associated with pain relief which facilitates mental health and psychological

well-being. Pain relief through mindfulness is correlated with greater activation in brain regions associated with the cognitive modulation of pain, including the orbitofrontal, subgenual anterior cingulate, and anterior insular cortex.⁴² The pain relief is primarily associated with multiple neural mechanisms supporting the cognitive regulation of ascending nociceptive processing [\uparrow prefrontal (PFC) and \uparrow perigenual anterior cingulate cortex (pgACC); \downarrow thalamus] and engages non-opioidergic endogenous systems.⁴³ Further, yoga postures also improve promote respiratory and cardiovascular functions⁴⁴ which ultimately assist for better psychological health. On the other hand, breath regulation has potential to bring the mind to the present moment and to reduce the level of stress and promote psychological well-being.⁴⁵

WAY FORWARD

Yoga improves physiological function, emotional state, sleep quality, quality of life, and subjective happiness. Yoga practices were found to be effective techniques for improving psychological well-being and overall health. Mindfulness, as a part of yoga, was also found to be associated with pain relief which facilitates mental health and psychological well-being. Yoga may improve mental health via down-regulation of the sympathetic nervous system and hypothalamic-pituitary-adrenal axis.

CONFLICT OF INTEREST

None

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