ABSTRACT  

Background: Vigilance is a term used alternatively with alertness or sustained attention and reflects arousal and cognitive performance[1]. Today’s society, thrive on performance, competition and perfection, which leads to an insidious increase in stress. Stress causes psycho-physiological damage that is often underestimated. Stress has an impact on sustained attention task performance resulted in mental health disorders. Mind-body techniques such as yoga have shown to improve stress reliance and thus enhances cognitive functions; attention, visual scanning, memory retrieval. The objective of this study was to determine whether classical hata yoga training would enhance the performance in vigilance task specific for sustained attention and alertness.

Material and Methods: Forty one participants who had enrolled in a forty five days Classical Hata Yoga training program. Their ages ranged between 18 and 50 years (group average ±S.D., 29.4±10.3 years, both genders). Those who have any chronic illness and mental illness, and those who are not willing to participate were excluded. Classical Hata Yoga training is given for 45 days, 3hours/day. At baseline and following forty five days, all participants completed DVT.

Results: Classical hata yoga training program showed significant change in DVT scores, showed 22% reduction (P < 0.0001) in total time taken and 41% decrease (P < 0.0001) in error scores.

Conclusions: The forty five days classical hata yoga training program was successful in enhancing the performance in vigilance task among adults.

INTRODUCTION

Vigilance is a term used alternatively with alertness or sustained attention and reflects arousal and cognitive performance[1]. Today’s society, thrive on performance, competition and perfection, which leads to an insidious increase in stress. Stress causes psycho-physiological damage that is often underestimated. Stress has an impact on sustained attention task performance [2]. The most studied physiologic responses to stress are activation of the hypothalamic–pituitary–adrenal (HPA) axis and the LC–NE-sympathetic nervous system pathway. The amygdala and parasympathetic system also interact with this latter pathway [3]. The function of the amygdala impacts vigilance and is thought to be affected by post-traumatic stress disorder which is associated with hyper-vigilance, difficulty concentrating, and sensitization of the alarm response [4]. Some of the interaction between stress and alertness is presumably mediated via the amygdala and its corticotrophin-releasing factor inputs to the LC[5], and result in an increased distractibility and a deficient focused attention. Findings suggest that yoga corrects imbalances in one's stress response by decreasing sympathetic nervous system activity and increasing parasympathetic nervous system activity [6]. Yoga research has demonstrated stress reduction among several populations, including people experiencing high levels of stress[7]. Several studies have reported the beneficial effect of multiple practices of Yoga including physical postures and meditation on attention. Yoga practices consisting of physical postures (Asana), voluntary regulation of breathing (Pranayama), relaxation practice and visual focusing exercises (Trataka) improve attention span in school children[8,9,10]. However, the changes in Sustain attention that characterize the efficacy of yoga for adults have not been reported adequately. Hence, the present study was designed to assess whether forty five days classical hata yoga training would enhance the performance in vigilance task specific for sustained attention and alertness.

MATERIAL AND METHODS

Forty one participants who had enrolled in a forty five days classical hata yoga training program. Their ages ranged between 18 and 50 years (group average ±S.D., 29.4±10.3 years; 29 females and 12 males). We have fully explained the potential risks and benefits in the study before written informed consent was provided by participants; the study was approved by the ethics committee of the institution, Lakulish Yoga University, “Lotus view” opp.Nirma University, S.G. Highway, Chharodi, Ahmedabad – 382 481, Gujarat, India. *Corresponding Author

Dr. Vijaya kumar
Associate Professor, BAMS, MD(Yoga & rehab.), M sc(psych), Department of Astanga yoga, Lakulish Yoga University, “Lotus view” opp.Nirma University, S.G. Highway, Chharodi, Ahmedabad – 382 481, Gujarat, India. *Corresponding Author

Sahana AU
M sc (Clinical psychology), Department of Astanga yoga, Lakulish Yoga University, “Lotus view” opp.Nirma University, S.G. Highway, Chharodi, Ahmedabad – 382 481, Gujarat, India.

KEYWORDS : vigilance, Classical Hata Yoga, DVT

Design and setting

The trial was a single group, pre-post trial. Participants were assessed on day 1 and day 45 of the forty five days classical hata yoga training program, when the assessment was completed, respondents were appreciated for their time and cooperation. The training program was held in a non residential Lakulish yoga university, located in Ahmadabad, Gujarat, India.

Intervention

The forty five days classical hata yoga training program: a yoga teacher training program consisted of two sessions each day. The first session was between 08:30 hours and 11:30 hours for practice and the second session was between 12:00 hours and 13:30 hours for theory. In a day participants practiced shithilikarana vyayamas (loosening practices) followed by yogasanas and relaxation techniques with pranayama practices. The concepts used to develop a specific module of teaching for training program were taken from the classical hata yoga scripture of Lakulish yoga tradition [11], one of the oldest schools of hata yoga in India. Yoga is defined as mastery over the modifications of mind (Chitta Vritti Nirodah-definition of yoga by Patanjali). It helps to remove the unnecessary surges of neuromuscular activation resulting from heightened stress responses that may contribute to aging.

Assessments

Vigilance or sustained attention

Sustained attention was measured using a digit vigilance test (DVT) of proven validity and reliability [12], which consisted of the numbers 1 to 9 arranged randomly in rows. Each sheet had 50 rows with 30 digits per row. The participants were instructed to cancel only 2 digits (6 and 9) as quickly as they could. They were asked not to: (i) cancel other digits or (ii) miss any of the target digits (6 and 9). The total time taken to complete the test and the number of errors made were noted.
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We would like to thank all the subjects for participating in this research.

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Conflict of interest

None

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