International Journal of Yoga, Physiotherapy and Physical Education
ISSN: 2456-5067
Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 2; Issue 5; September 2017; Page No. 32-34

Effect of Trataka on blood pressure of college level female students

[1] Champak Bhadra, [2] Dr. Kallol Chatterjee

[1] Research Scholar, Dept. of Physical Education, Vinaya-Bhavana, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, India
[2] Assistant Prof., Dept. of Physical Education, Vinaya-Bhavana, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, India

Abstract
Trataka is yogic visual concentration technique and also another method of meditation which involves alternately gazing at an object or point without blinking eye's, then closing the eyes and visualizing the object in the mind's eye. The present study was done to know the effect of Trataka on blood pressure changing following short term Trataka practice. Systolic & diastolic blood pressure were assessed in five college level female students from Dept. of Physical Education, Vinaya-Bhavana, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, India, with ages ranging from 18 to 22 years. There was total 15 minutes Trataka programmed given, before and after yogic visual concentration (Trataka) Systolic & diastolic blood pressure measured by BP test (Sphygmomanometer) and 't'- ratio were performed to compare the changes of Systolic & diastolic blood pressure between pre and post test. The results were compared and analyzed and it was observed that systolic blood pressure was reduced & significantly differences ('t'= 4.781) and diastolic blood pressure was reduced but no significance differences ('t'= 0.323). The practice of short term Trataka leads to significantly reduced systolic blood pressure and no significantly reduced diastolic blood pressure.

Keywords: systolic & diastolic blood pressure & trataka

Introduction
The word Yoga is derived from the Sanskrit origin 'Yuje' which means to join. Maharishi Patanjali is known as father of 'Modern Yoga'. He adviser of Ashtanga Yoga which are divided into eight types i.e. Yoma, Niyama, Asanas, Pranayam, Pratyahar, Dharna, Dhyan (meditation), Samadhi. According to vyasji, "meaning of yoga is meditation". It means focusing the mind on one point, also good technique to reduce stress and for a peaceful mind. Trataka is also another method of meditation which involves alternately gazing at an object or point without blinking eye's, then closing the eyes and visualizing the object in the mind's eye. The flow of thoughts in our brain is an on-going process. Due to this, 80 per cent of our energy is wasted and our central nerve system loses its balance. But when we attain trataka sadhana, gradually we start experiencing peace of mind, and thereafter we start getting rid of unwanted thoughts. With this process we start gaining more and more energy.

Blood pressure (BP) is the pressure of circulating blood on the walls of blood vessels. When used without further specification, "blood pressure" usually refers to the pressure in large arteries of the systemic circulation. Blood pressure is usually expressed in terms of the systolic (maximum during one heart beat) pressure over diastolic (minimum in between two heart beats) pressure and is measured in millimeters of mercury (mmHg), above the surrounding atmospheric pressure (considered to be zero for convenience). It is one of the vital signs, along with respiratory rate, heart rate, oxygen saturation, and body temperature. Normal resting blood pressure in an adult is approximately 120 mmHg systolic, and 80 mmHg diastolic, abbreviated "120/80 mmHg".

The present study however was under taken to ascertain whether short-term Trataka practice, after practice has any effect on reducing the blood pressure level and its impact on blood pressure of college level female students.

Objectives of the Study
To understand the role of Trataka in maintaining systolic and diastolic blood pressure level of college level female students.

Materials & Methods
For the present study total 5 college levels female students were randomly required from Dept. of Physical Education, Vinaya-Bhavana, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, India. Their age ranges from 18-22 years. The study was conducted during the year 2016-2017 academic sessions in the institute laboratory. To test systolic & diastolic blood pressure used Sphygmomanometer with the help of experts. Before recording the parameters, the subject was asked to relax physically and mentally for few minutes. For the collection of data there was given pre and post test. The selected subject underwent a short term Trataka training effect and they carried out Trataka for 15 minutes at evening sessions, under the instruction and supervision of the supervisor and help of others experts.

Statistical Analysis
In all cases 0.05 level of confidence was utilized to test the significance and to calculated the pre and post test collected data were students 't' test applied.

Training protocol (Trataka)

Table 1

Sabasana	2 minutes
Trataka	3 minutes
Sabasana	1 minutes
Trataka	3 minutes
Sabasana	1 minutes
Trataka	3 minutes
Sabasana	2 minutes

Results

The statistical analysis of the data due to the effect of short term Trataka training on systolic & diastolic blood pressure in pre and post test of the subjects of Dept. of Physical Education, Vinaya-Bhavana, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, India, was computed by 't' ratio which is presented in the Table-02 & Table-03.

Table 2: Significance of Difference Means and Standard Deviations of Bp Test For Measuring Systolic Blood Pressure Between Pre And Post Test of College Level Female Students

Systolic BP	Mean	Standard Deviation	't' ratio
Pre	113.4	5.272	4.781*
Post	105.4	1.456	

Tab't'$_{.05}$ 5=2.571
*significant at 0.05 level of confidence

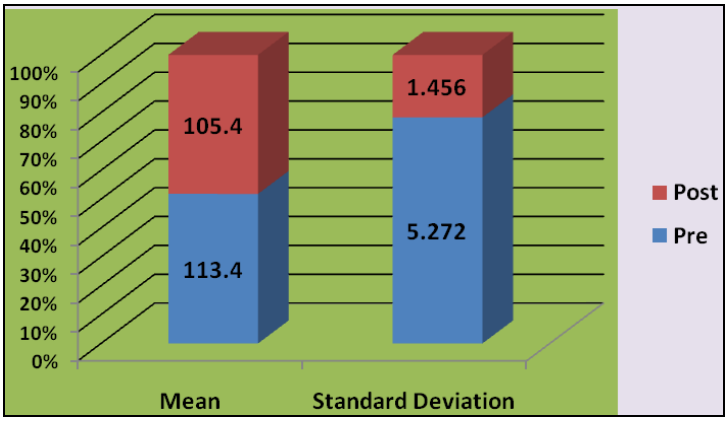

Fig 1: Comparison of Means and Standard Deviations for Measuring Systolic Blood Pressure Between Pre Test and Post Test of College Level Female Students.

From the above table-02 as well as figure-01 it clearly indicates that the computed't' value (4.781*) is greater than tabulated 't' value (2.571). The evidence is sufficient to indicate a difference in mean on systolic blood pressure before and after short time trataka. So we can conclude that 15 minutes trataka practice have significant effect on systolic blood pressure of the college level female students of Vinaya-Bhavana, Visva-Bharati University.

Table 3: Significance of Difference Means and Standard Deviations of Bp Test for Measuring Diastolic Blood Pressure Between Pre and Post Test of College Level Female Students

Diastolic BP	Mean	Standard Deviation	't' ratio
Pre	67.8	6.723	0.323*
Post	65.4	6.618	

Tab't'$_{.05}$ 5=2.571
*significant at 0.05 level of confidence

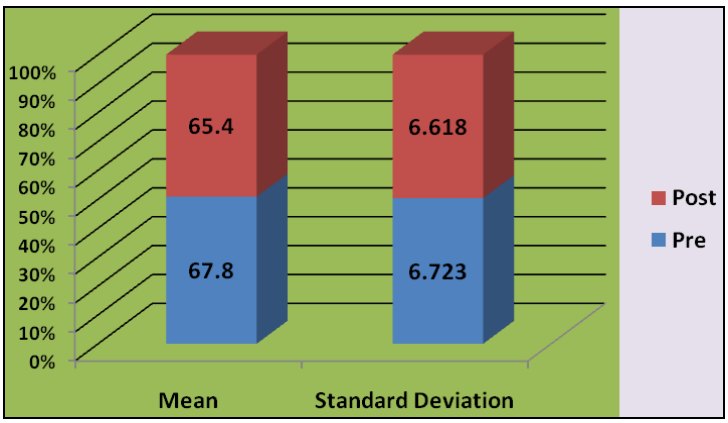

Fig 2: Comparison of Means and Standard Deviations for Measuring Diastolic Blood Pressure Between Pre Test and Post Test of College Level Female Students.

From the above table-03 as well as figure-02 it clearly indicates that the computed 't' value (0.323*) is less than tabulated 't' value (2.571).The evidence is sufficient to indicate a difference in mean on diastolic blood pressure before and after short time trataka. So we can conclude that 15 minutes trataka practice have no significant effect on diastolic blood pressure of the college level female students of Vinaya-Bhavana, Visva-Bharati University.

Discussion

From the finding, it was clearly indicated that there were significance difference between pre and post result on systolic blood pressure and no significant difference on diastolic blood pressure of the college level female students of Vinaya-Bhavana, Visva-Bharati University.

The mean values of systolic blood pressure and diastolic blood pressure are significant reduction after 15 minutes trataka practice. Reduction in blood pressure indicates a shift in the balancing components of autonomic nervous system towards the parasympathetic activity which was reported by Santha Joseph *et al.* [6] and Anand BK *et al.* [7]. This modulation of autonomic nervous system activity might have been brought about through the conditioning effect of yoga on autonomic functions and mediated through the limbic system and higher areas of central nervous system were reported by Selvamurthy *et al.* [8]. Regular practice of yoga increases the baroreflex sensitivity and decreases the sympathetic tone; thereby restoring blood pressure to normal level in patients of essential hypertension was reported by Vijaya Lakshmi *et al.* [9]. Meditation by modifying the state of anxiety reduces stress – induced sympathetic over activity thereby decreasing arterial tone and peripheral resistance, and resulting in decreased diastolic blood pressure. This ensures better peripheral circulation was reported by Bhargava *et al.* [10] and blood flow to the tissues reported by Gopal *et al.* [11].

The present study also revealed the significant response in subjects on systolic blood pressure and no significant response on diastolic blood pressure. This may suggest that trataka is more effective in reducing the blood pressure.

Conclusions

On the basis of the finding it can thus be concluded that there was significantly reduced systolic blood pressure and no significantly reduced diastolic blood pressure between pre and post result of 15 minutes trataka practiced of the college level female students of Vinaya-Bhavana, Visva-Bharati University.

References

1. Clarke David H, Clarke H, Harrison. Research Processes in Physical Education, Second Edition, Englewood Cliffs, New Jersey 07632 Prentice Hall INC, 1970.
2. Prof. Verma J. Prakash. A Text Book on Sports Statistics, sports publication, 1986.
3. Fox EL, Mathews DK. The Physiological Basis of physical education and Athletics. Philadelphia: Sanders college publishing. 1981.
4. Lyenger BKS. Light on Yoga, Great Britain, George Allen and Unwin, 1982.
5. Sharma PD. Yoga Yogasana and pranayama for Health. Navneet publications *I* Lihemdabad.1984.
6. Santha Joseph, Sridhar K, Patel SKB, Kumaria ML, Selvamurthy W, Joseph NT *et al.* Study of some physiological and biochemical parameters in subjects undergoing yoga training. Indian J medicine res. 1981; 74; 120-124.
7. Anand BK. Yoga and medical seicences. Indian J Physio Pharmocol 1991; 35(2):84-87.
8. Selvamurthy W, Nayar HS, Joseph NT, Joseph S. Physiological effects of yogic practice. Nimhans journal 1983; 71-80.
9. Vijayalakshmi P, Madan Mohan, Bhavanani AB, Asmita Patil, Kumar Babu P. Modulation of stress induced by isometric hand grip test in hypertensive patients following yogic relaxation training. Indian J Physiol Pharmacol 2004; 48(1):59-60.
10. Bhargava R, Gogate MG, Macarenhas JF. Autonomic responses to breath holding and its variations following pranayama. Indian J Physiol Pharmacol 1988; 32(4):257-264.
11. Gopal KS, Bhatnagar OP, Subramanian N, Nishith SD. Effect of yogasana and pranayamas on blood pressure, pulse rate and some respiratory functions. Indian J Physiol Pharmacol 1973; 17(3):273-276.
12. Devasena Indla, Narhare Pandurang. Effect of yoga on heart rate and blood pressure and its clinical significance, Department of physiology, Chalmeda Anand Rao Institute of Medical Sciences, Bommakal, Karimnagar - 505001, AP, India, International Journal of Biological & Medical Research.
13. BR Raghavendra, V Ramamurthy. Changes in heart rate variability following yogic visual concentration *Trataka* Division of Yoga and Life Sciences, Swami Vivekananda Yoga Anusandhana Samsthana, Bengaluru, Karnataka, India date of web publication, 2014.
14. Dr. Chowdhary Binod. Effect of Tratak Candle Flame Meditation on Concentration and Memory Level of the College Athletics Team, Indian journal of research, httpwww.worldwidejournals.comparipexfile.phpval=July_2015_1437032106__120.pdf. 2015; 4(07).
15. Talwadkar Shubhada, Jagannathan Aarti and Nagarathna Raghuram. Effect of trataka on cognitive functions in the elderly, International Journal of Yoga, Int J Yoga. doi: 10.4103/0973-6131.133872 PMCID: PMC4097909, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4097909. 2014; 7(2):96-103
16. httpwww.yogamag.netarchives1991cmay91tratak.shtml.