

A study effects of yogic practice on cardiovascular system in apparently healthy volunteers at tertiary health care center

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Abstract

Background: Yoga is a psycho-somatic-spiritual discipline for achieving union and harmony between our mind, body, and soul and the ultimate union of our individual consciousness with the universal consciousness. **Aims and Objectives:** To study Effects of yogic practice on cardiovascular system in apparently healthy volunteers at tertiary health care center. **Methodology:** This was a cross sectional study carried out in the department of physiology of a tertiary health care centre during the six month period i.e. March 2018 to August 2018 in the study period 70 apparently healthy individuals were selected out of these with written and explained consent 35 individuals were instructed and trained in the yogic practices (Yogic group n=35) and rest 35 individuals were control (Non yogic group n=35). The data was analyzed by chi-square test and unpaired t-test and analyzed by SPSS 19 version software. **Result:** The Pulse rate (beats/min) was significantly lower i.e. 074.58 ± 3.87 and 082.18 ± 5.73 ($t=7.92$, $P<0.0001^{**}$); Systolic B.P. (mm Hg) significantly lower i.e. 128.23 ± 4.26 and 135.50 ± 8.54 ($t=5.63$, $P<0.001^{**}$); Diastolic B.P. (mm Hg) was significantly lower i.e. 070.23 ± 5.76 and 92.16 ± 6.47 ($t=7.59$, $P<0.001^{**}$) respectively in Yogic as compared to non yogic apparently healthy individuals. **Conclusion:** It can be concluded from our study that the yogic individual were having significantly lesser Pulse rate, Systolic and diastolic BP as compared to non yogic individuals hence Yoga should be practiced for prevention of hypertension and its complications. **Key Word:** Yoga, cardiovascular system Hypertensions.

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INTRODUCTION

Yoga is a psycho-somatic-spiritual discipline for achieving union and harmony between our mind, body, and soul and the ultimate union of our individual consciousness with the universal consciousness.¹ Pranayama is derived from two Sanskrit words, namely,

prana, which means vital force or life energy, ayama means to prolong.² Transcendental meditation (TM) is one of the techniques of meditation, which involves allowing the mind to dwell on a series of words (called a mantra) given by the meditation teacher, with no effort. If the attention wanders it is allowed to wander till it returns to the mantra.² When a person practices yoga, with yogic attitude (attitude of patience, persistent practice, overcoming obstacles within self, that is, trouncing laziness, anger, delusion, and desire for being different or better than others), there are several changes in physiology.² Just we have seen the effect of Yoga on the physiology of cardiovascular system at tertiary health care centre

METHODOLOGY

This was a cross sectional study carried out in the department of physiology of a tertiary health care centre

during the six month period i.e. March 2018 to August 2018 in the study period 70 apparently healthy individuals were selected out of these with written and explained consent 35 individuals were instructed and trained in the yogic practices (Yogic group n=35) and rest 35 individuals were control (Non yogic group n=35). The data like age sex and cardiovascular parameter at the end of 6 weeks duration were done. The data was analyzed by chi-square test and unpaired t-test and analyzed by SPSS 19 version software.

Ethical Approval was taken from Institutional ethical committee.

RESULT

Table 1: Distribution of the patients as per the age and sex

	Yogic (n=35)	Non -Yogic (n=35)	t-value and p-value
Age (Yrs.)	34.52 ± 4.32	35.19± 5.39	t=0.65,p>0.05
Sex			
Male	21	23	X ² =0.34,p>0.05
Female	13	12	

The age was comparable 34.52 ± 4.32 and 35.19± 5.39 (t=0.65, p>0.05); The ratio of male to female was 1.57 : 1 and 1.91: 1 was also comparable (X²=0.34,p>0.05).

Table 2: Distribution of the patients as per the cardiovascular parameters

Parameters	Yogic	Non -Yogic	't' value	'P' value
Pulse rate (beats/min)	074.58±3.87	082.18±5.73	7.92	P<0.0001**
Systolic B.P. (mm Hg)	128.23±4.26	135.50±8.54	5.63	P<0.001**
Diastolic B.P. (mm Hg)	070.23±5.76	92.16±6.47	7.59	P<0.001**

The Pulse rate (beats/min) was significantly lower i.e. 074.58±3.87 and 082.18±5.73 (t=7.92, P<0.0001**); Systolic B.P. (mm Hg) significantly lower i.e. 128.23±4.26 and 135.50±8.54 (t=5.63, P<0.001**); Diastolic B.P. (mm Hg) was significantly lower i.e. 070.23±5.76 and 92.16±6.47 (t=7.59, P<0.001**) respectively in Yogic as compared to non yogic apparently healthy individuals.

DISCUSSION

Yoga is a science that is practiced for thousands of years. It produces physiological changes and has sound scientific basis.³⁻⁶ Throughout the world, scientists have extensively studied yogasanas and have claimed that yoga increases longevity of life and has therapeutic and rehabilitative effects.³⁻⁵ Various ancient Indian literatures such as Grantha Samitha and Bhagwad Gita have mentioned about various yogic practices. The scientific

approach toward yoga was adopted in the second half of the 19th century.⁵⁻⁷ Specific yogasanas are recommended for various systems and organs of our body³ Asanas fulfill various needs of musculoskeletal, digestive, circulatory, respiratory, and nervous system.^{3,5,6} Regular practice of yogic exercises helps in reducing the incidence and controlling highly prevalent diseases such as diabetes, hypertension, digestive, and endocrinal disorders. Arthritis, asthma, and chronic fatigue can also reduced.^{5-8,10} The combination of biofeedback, yogic breathing, and relaxation techniques lowers the blood pressure.^{7,8,16} The asanas decrease the sympathetic tone, rate pressure product (RPP) and double product (DoP), and improve cardiovascular endurance and anaerobic threshold.^{3,5,6,10,11} In our study we have seen that The age was comparable 34.52 ± 4.32 and 35.19± 5.39 (t=0.65,p>0.05); The ratio of male to female was 1.57 : 1 and 1.91: 1 was also comparable (X²=0.34,p>0.05).The Pulse rate (beats/min) was significantly lower i.e 074.58±3.87 and 082.18±5.73 (t=7.92,P<0.0001**); Systolic B.P. (mm Hg) significantly lower i.e. 128.23±4.26 and 135.50±8.54 (t=5.63,P<0.001**); Diastolic B.P. (mm Hg) was significantly lower i.e. 070.23±5.76 and 92.16±6.47 (t=7.59, P<0.001**) respectively in Yogic as compared to non yogic apparently healthy individuals. These findings are similar to Jyotsana R. Bharshankar *et al* ¹⁷ they found t significant reduction in the pulse rate occurs in subjects practicing yoga (P<0.001). The difference in the mean values of systolic and diastolic blood pressure between study group and control group was also statistically significant (P<0.001 respectively).

CONCLUSION

It can be concluded from our study that the yogic individual were having significantly lesser Pulse rate, Systolic and diastolic BP as compared to non yogic individuals hence Yoga should be practiced for prevention of hypertension and its complications.

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