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## Influence of yoga on cardiovascular risk factors of police personnel

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**Abstract**

This study was designed to investigate the influence of yoga training on selected cardio risk factors of police personnel. To achieve the purpose of the study 40 police personnel were selected from Coimbatore district there aged between 35 and 45 years. The subjects were randomly assigned into two equal groups (n=20). Group- I underwent Yoga training and Group - II was acted as control group (CG). The respective training was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work. Body mass index was assessed by standard calibrated weighing machine test and the unit of measurement was in numbers, systolic blood pressure were assessed by sphygmomanometer the unit of measurement was in mm/hg pressure and job stress was assessed by symptoms of job stress questionnaire(JSQ) test in numbers. The data collected from the subjects was statistically analyzed with 't' ratio to find out significant improvement if any at 0.05 level of confidence. The result of the body mass index, systolic blood pressure and job stress improved significantly due to influence of yoga training with the limitations of (diet, climate, life style) status and previous training the result of the present study coincide findings of the investigation done by different experts in the field of sports sciences. Yoga training significantly improved body mass index, systolic blood pressure and job stress of police personnel.

**Keywords:** Yoga, police personnel, body mass index, systolic blood pressure and job stress

**Introduction**

Police personnel play a pivotal role in any society by ensuring security and stability. They constitute a special occupational group with exposure to violence at work, which directly and indirectly affects their health. Police Profession working pattern are Hectic and due to irregularity of Duty Schedule they get less time for proper Health attention. Police personnel constitute a special occupational group with exposure to cases of violence and stress at work, which directly and indirectly affects their health. A cohort study on Helsinki policemen found coronary heart disease as a major cause of mortality among policemen. Obesity, dietary factors, smoking, alcohol use, exposure to stress at work and lack of physical activity were important factors associated with cardiovascular disease.

Yoga, an ancient mind-body practice which originated in India and incorporates physical, mental, and spiritual elements, has been shown in several studies to be effective in improving cardiovascular risk factors, with reduction in the risk of heart attacks and strokes. There is "promising evidence" that the popular mind-body practice of yoga is beneficial in managing and improving the risk factors associated with cardiovascular disease and is a "potentially effective therapy" for cardiovascular health. Yoga is traditionally believed to have beneficial effects on physical and emotional health. Modern life style stresses have been shown to be a major contributory factor to many diseases including CVD. A US based study has demonstrated that mindfulness based stress reduction (MBSR) such as yoga, reduced the average number of visits to primary care physicians in inner city areas suggesting that yoga may contribute to general health and particularly in cardiac health in populations that are subject to significant mental stress. Several studies suggest that yoga may significantly improve risk factors for CVD like body weight, lipid profile, blood pressure. Yoga appears to be especially beneficial for primary and secondary prevention of CVD.

## Methods

Twenty physically active and interested police officers were randomly selected as subjects and their age ranged between 35 and 45 years. The subjects are categorized into two groups namely control group (CG) Yoga group and each group had 20 subjects. The selected criterion variables BMI was assessed by Standard Calibrated weighing machine, Stadiometer in numbers, Systolic blood pressure was assessed by Sphygmomanometer in mm/hg pressure and job stress was assessed by Symptoms of job stress questionnaire(JSQ) test in numbers. The yoga groups underwent the experimental treatment for 12 weeks, 3 days/week and a session on each day with 45 min duration.

## Statistical analysis

The means and standard deviations of both control and yoga training groups were calculated for BMI, Systolic blood pressure and job stress for the pre as well as posttests. The collected data was analyzed using "t" test. Statistical significance was set to a priority at  $p < 0.05$ . All statistical tests were calculated using the statistical package for the social science (SPSS).

## Training programme

The training programme was lasted for 60 minutes for session in a day, 6 days in a week for a period of 12 weeks duration.

These 60 minutes included warm up for 10 minutes, 40 minutes yoga trainings and 10 minutes warm down. The equivalent in pressure training is the length of the time each action in total 6 day per weeks. (Monday to Saturday)

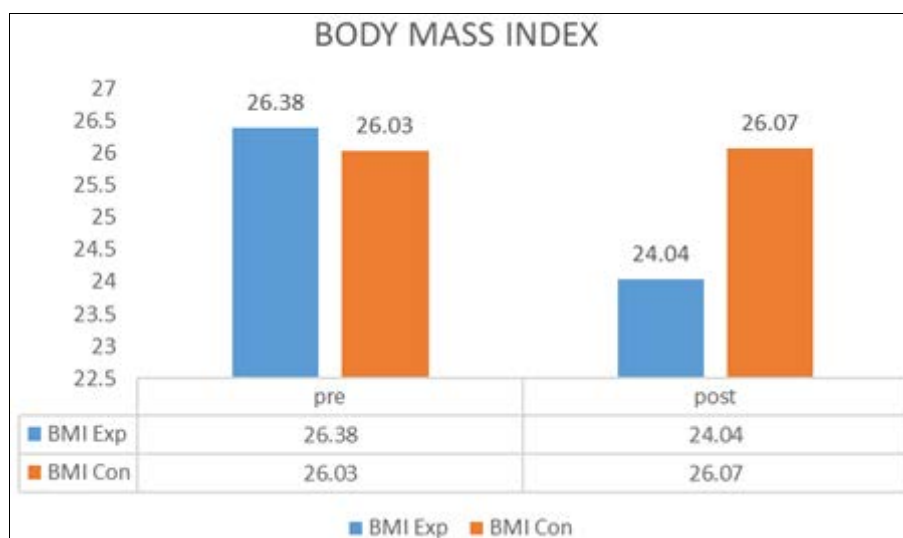
**Table 1:** Computation of 't' ratio on body mass index on experimental group and control group (Scores in Numbers)

| Groups             | Pre test | Post test | Sd   | "t" ratio |
|--------------------|----------|-----------|------|-----------|
| Experimental Group | 26.38    | 24.04     | 3.27 | 8.03*     |
| Control Group      | 26.03    | 26.07     | 2.95 | 0.038     |

\*significant level 0.05 level (degree of freedom 2.09, 1 and 19)

Table 1 reveals the computation of mean, standard deviation and 't' ratio on selected variables namely BMI of experimental group. The obtained 't' ratio on BMI were 8.03 respectively. The required table value was 2.09 for the degrees of freedom 1 and 19 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on selected variables parameters namely BMI of control group. The obtained 't' ratio on BMI were 0.038 respectively. The required table value was 2.09 for the degrees of freedom 1 and 19 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.



**Fig 1:** Bar diagram showing the mean value on body mass index on experimental group and control group

**Table 2:** Computation of 't' ratio on systolic blood pressure on experimental group and control group (Scores in Numbers)

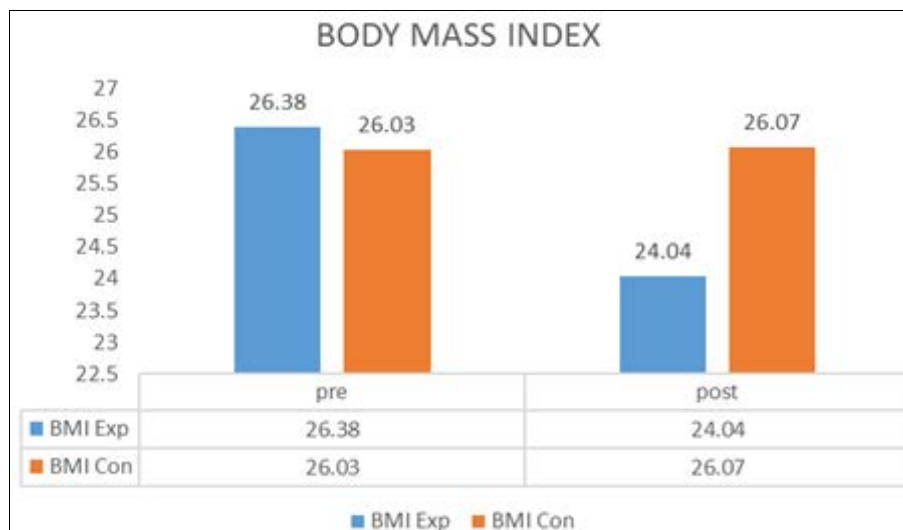
| Groups             | Pre test | Post test | Sd    | "t" ratio |
|--------------------|----------|-----------|-------|-----------|
| Experimental Group | 131.15   | 123.80    | 7.83  | 25.92*    |
| Control Group      | 131.05   | 132.55    | 18.71 | 0.276     |

\*significant level 0.05 level (degree of freedom 2.09, 1 and 19)

Table I reveals the computation of mean, standard deviation and 't' ratio on selected variables namely systolic blood pressure of experimental group. The obtained 't' ratio on systolic blood pressure were 25.92 respectively. The required table value was 2.09 for the degrees of freedom 1 and 19 at

the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on selected variables parameters namely systolic blood pressure of control group. The obtained 't' ratio on systolic blood pressure were 0.276 respectively. The required table value was 2.09 for the degrees of freedom 1 and 19 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.



**Fig 2:** Bar diagram showing the mean value on systolic blood pressure on experimental group and control group

**Table 3:** Computation of ‘t’ ratio on job stress on experimental group and control group (Scores in Numbers)

| Groups             | Pre test | Post test | Sd   | “t” ratio |
|--------------------|----------|-----------|------|-----------|
| Experimental Group | 28.70    | 22.95     | 5.52 | 7.70*     |
| Control Group      | 28.50    | 28.35     | 2.00 | 1.37      |

\*significant level 0.05 level (degree of freedom 2.09, 1 and 19)

Table I reveals the computation of mean, standard deviation and ‘t’ ratio on selected variables namely job stress of experimental group. The obtained ‘t’ ratio on job stress were 7.70 respectively. The required table value was 2.09 for the

degrees of freedom 1 and 19 at the 0.05 level of significance. Since the obtained ‘t’ values were greater than the table value it was found to be statistically significant. Further the computation of mean, standard deviation and ‘t’ ratio on selected variables parameters namely job stress of control group. The obtained ‘t’ ratio on job stress were 1.37 respectively. The required table value was 2.09 for the degrees of freedom 1 and 19 at the 0.05 level of significance. Since the obtained ‘t’ values were lesser than the table value it was found to be statistically not significant.



**Fig 3:** Bar diagram showing the mean value on job stress on experimental group and control group

**Discussion and Findings**

The present study experimented the influence of eight weeks yoga exercises on the selected parameters of the police personnel. The results of this study indicated that yoga exercises is more efficient to bring out desirable changes over the cardiovascular risk factors of the police personnel. The findings of the study are supported with Robert *et al.*, (2007) the endurance training decrease blood pressure through reduction in systematic vascular resistance 29% and also it minimize the effect of the associated cardiovascular risk factors like body weight. James *et al.*, (2002) the longer practice of yoga, the stronger the benefits of overall pulmonary endurance. Pathak, S. (2022) [6] Selected Yogic Practices on BMI Variables among Residential Females.

Hence, it concluded that for Body mass index, systolic blood pressure and job stress improvement of police personnel.

**Conclusions**

From the results of the study and discussion the following conclusions were drawn.

1. Based on the result of the study it was concluded that the 12 weeks of yoga training have been significantly improved body mass index, systolic blood pressure and job stress of police personnel.
2. It was concluded that yoga training have been significantly improved cardio vascular risk factors among police personnel.

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