



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJIF): 5.38
IJPESH 2022; 9(6): 318-321
© 2022 IJPESH
www.kheljournal.com
Received: 12-08-2022
Accepted: 18-09-2022

R Ezhilarasi

Ph.D. Research Scholar,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Dr. K Murugavel

Senior Professor and Head,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Corresponding Author:

R Ezhilarasi

Ph.D. Research Scholar,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Effect of pilates training on cardiovascular risk factors of police personnel

R Ezhilarasi and Dr. K Murugavel

Abstract

This study was planned to examine the impact of Pilates 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 was randomly assigned into two equal groups (n=20). Group- I underwent Pilates 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 be given any sort of training except their routine work. Body fat percentage was assessed by OMRON BF 306 hand-held body fat monitor test and the unit of measurement was in percentage. Diastolic blood pressure were assessed by sphygmomanometer the unit of measurement was in mm/hg pressure and Quality of life was assessed by symptoms of SF-36V2 Health related quality of life questionnaire 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 fat percentage, diastolic blood pressure and quality of life improved significantly due to influence of pilates 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. Pilates training significantly improved body fat percentage, diastolic blood pressure and quality of life of police personnel.

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

Introduction

Police officers constitute an occupational group that is prone to increased prevalence and incidence of cardiovascular disease as a result of the stressful nature of their job. Globally, police officers play an important role in our socio-political dispensation by ensuring law and order in society. However, as they discharge their duties, they are exposed to violence, which affect the totality of their health. Regarding cardiovascular responses during exercise, blood supply should be adequately distributed to exercising muscles to maintain body homeostasis, and heat generated from muscle contraction should be dispersed and adequately supplied to the heart and blood. Respiratory functions can be functionally improved by physical trainings. Gait training significantly improves the maximal oxygen consumption, but has limited intensity settings. They further demonstrated that this training is expected to positively affect the maximal oxygen consumption (Chang *et al*). Therefore, the present study sought to investigate the effects of Pilates training on patients with cardiovascular disease.

Pilates is a form of low-impact exercise that aims to strengthen muscles while improving postural alignment and flexibility. Pilates moves tend to target our core, although the exercises work other areas of our body as well. "Pilates is not restricted to specific body parts," Pilates is a form of exercise which concentrates on strengthening the body with an emphasis on core strength. This helps to improve general fitness and overall well-being. Similar to Yoga, Pilates concentrates on posture, balance and flexibility. Originally this form of exercise was called Contrology.

Methods

Twenty physically active and interested police personnel 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 Body fat percentage was assessed by OMRON BF 306 hand-held body fat monitor, in Percentage, Diastolic blood pressure was assessed by Sphygmomanometer in mm/hg pressure and Quality of life was assessed by SF-36V2 Health related quality of life questionnaire test in numbers. The pilates 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 Pilates training groups were calculated for Body fat percentage, Diastolic blood pressure and Quality of life 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 Pilates 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 fat percentage on experimental group and control group (Scores in Numbers)

Groups	Pre test	Post test	SD	"T" ratio
Experimental Group	25.68	24.23	2.42	8.41*
Control Group	25.46	25.61	2.46	0.95

*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 Body fat percentage of experimental group. The obtained 't' ratio on Body fat percentage were 8.41 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 Body fat percentage of control group. The obtained 't' ratio on Body fat percentage were 0.95 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.

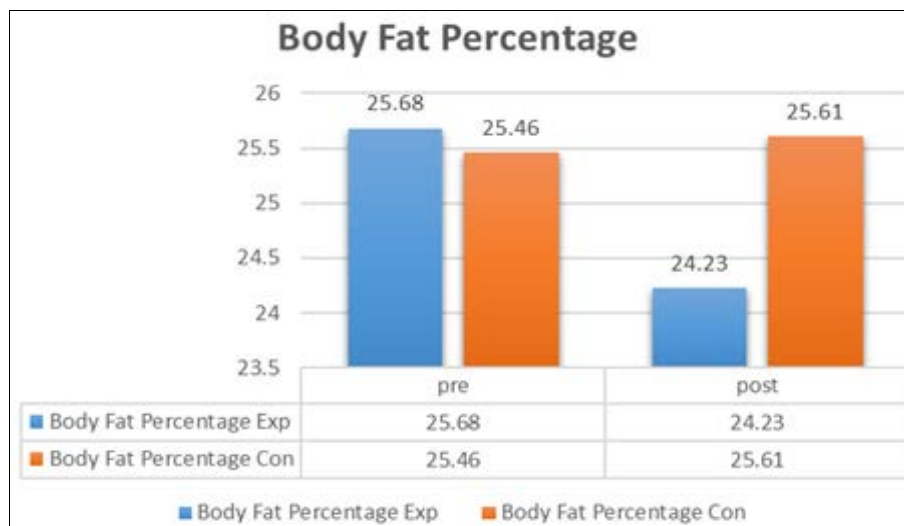


Fig 1: Bar diagram showing the mean value on body fat percentage on experimental group and control group

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

Groups	Pre test	Post test	SD	"T" ratio
Experimental Group	90.05	87.75	6.99	7.02*
Control Group	89.15	91.15	9.03	1.42

*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 diastolic blood pressure of experimental group. The obtained 't' ratio on diastolic blood pressure were 7.02 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 diastolic blood pressure of control group. The obtained 't' ratio on diastolic blood pressure were 1.42 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.

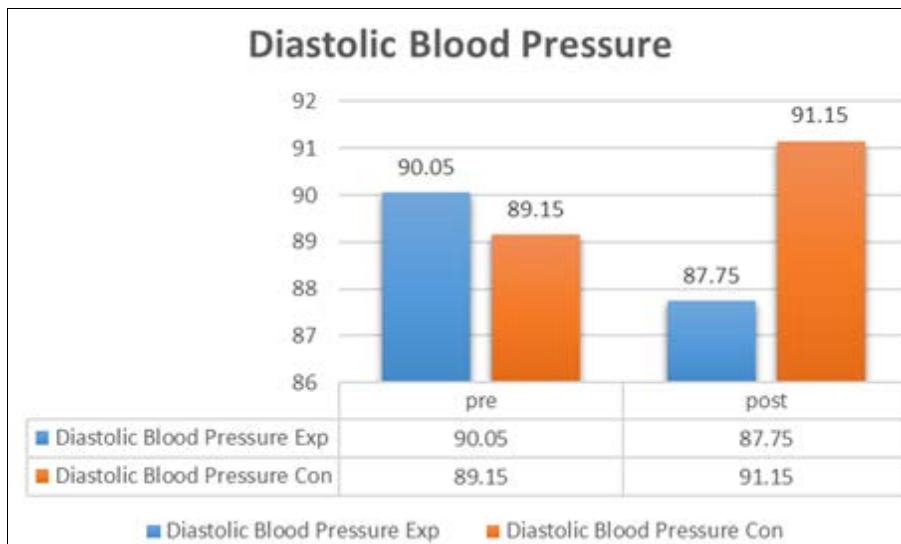


Fig 2: Bar diagram showing the mean value on diastolic blood pressure on experimental group and control group

Table 3: Computation of ‘t’ ratio on quality of life on experimental group and control group (Scores in Numbers)

Groups	Pre test	Post test	SD	“T” ratio
Experimental Group	60.15	63.60	9.20	14.69*
Control Group	60.65	60.60	15.29	0.27

*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 quality of life of experimental group. The obtained ‘t’ ratio on quality of life were 14.69 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 quality of life of control group. The obtained ‘t’ ratio on quality of life were 0.27 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.

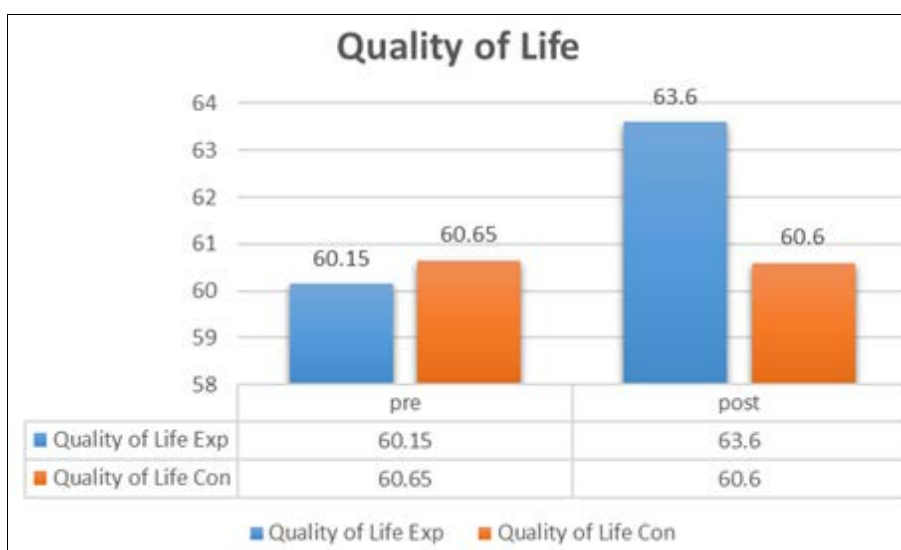


Fig 3: Bar diagram showing the mean value on quality of life on experimental group and control group

Discussion and Findings

The present study experimented the influence of eight weeks yoga exercises on the selected variables 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.

Sixteen week pilates training reduced body weight and body fat of white women.

Pilates interventions decreased body weight, BMI and percent body fat in previously sedentary adults.

Rogers and Gibson (2009) found that eight weeks of traditional mat pilates significantly improved body composition, muscular endurance and flexibility.

Sixteen week Pilates programme reduced total body weight and significantly improved cardio respiratory fitness, flexibility, strength and health related quality of life in obese men.

Hence, it concluded that for Body fat percentage, Diastolic blood pressure and Quality of Life 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 fat percentage, diastolic blood pressure and quality of life of police personnel.

2. It was concluded that Pilates training have been significantly improved cardio vascular risk factors among police personnel.

Reference

1. Giacomini MB, da Silva AM, Weber LM, Monteiro MB. The Pilates Method increases respiratory muscle strength and performance as well as abdominal muscle thickness. *J Bodyw Mov Ther.* 2016;20(2):258-64. DOI: 10.1016/j.jbmt.2015.11.003. [PubMed: 27210841].
2. Keane Sandie. *Pilates for core strength*, London, England, Greenwich Editions; c2005.
3. Lim HS, Kim YL, Lee SM. The effects of Pilates exercise training on static and dynamic balance in chronic stroke patients: a randomized controlled trial. *J Phys Ther Sci.* 2016;28:1819-1824. [PMC free article] [PubMed] [Google Scholar].
4. Omidali Z, Taheri H, Asfarjani F, Bambaiech E, Marandi SM. The effect of pilates training on selective physiological and physical fitness in untrained females with overweight. *Journal of Research in Rehabilitation Sciences.* 2012;8(1):180-191.
5. Rayes ABR, de Lira CAB, Viana RB, Benedito-Silva AA, Vancini RL, Mascarin N, *et al.* The effects of Pilates vs. aerobic training on cardiorespiratory fitness, isokinetic muscular strength, body composition, and functional tasks outcomes for individuals who are overweight/obese: A clinical trial. *Peer J.* 2019;7:e6022. DOI: 10.7717/peerj.6022. [PubMed: 30842893]. [PubMed Central: PMC6397755].
6. Saha A, Sahu S, Paul G. Evaluation of cardio-vascular risk factor in police officers. *International Journal of Pharma and Bio Sciences.* 2010;1(4):263-271.
7. Sevimli D, Sanri M. Effects of Cardio-Pilates Exercise Program on Physical Characteristics of Females. *Universal Journal of Educational Research.* 2017;5(4):677-680.
8. Tinoco-Fernandez M, Jimenez-Martin M, Sanchez-Caravaca MA, Fernandez-Perez AM, Ramirez-Rodrigo J, Villaverde-Gutierrez C. The Pilates method and cardiorespiratory adaptation to training. *Res Sports Med.* 2016;24(3):281-6. DOI: 10.1080/15438627.2016.1202829. [PubMed: 27357919].
9. Udayar SE, Kumar R, Kumar P, Vairamuthu S, Thatuku S. Study of cardiovascular risk factors among transport drivers in rural area of Andhra Pradesh. *National Journal of Community Medicine.* 2015;6(04):566-570.