



ISSN Print: 2664-7249  
ISSN Online: 2664-7257  
IJPEPE 2024; 6(1): 83-85  
[www.physicaleducationjournals.com](http://www.physicaleducationjournals.com)  
Received: 16-11-2023  
Accepted: 25-12-2023

**Dr. K Kavitha**  
Director of Physical  
Education, Navarasam Arts  
and Science College for  
Women, Arachalur,  
Tamil Nadu, India

## Effect of yoga with Pilates exercises on selected physiological variables of women volleyball players

**Dr. K Kavitha**

**DOI:** <https://doi.org/10.33545/26647249.2024.v6.i1b.97>

### Abstract

This study was investigated the impact of yoga training with pilates exercises on selected physiological parameters of women volleyball players. To achieve the purpose of the study 30 women volleyball players were selected from Navarasam College of arts and science. The subjects were randomly assigned to two equal groups (n=15). Group- I underwent yoga training with pilates exercises (YWPT) and group - II was acted as control group (CG). The yoga training with pilates exercises 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. The anaerobic performance variables of vo<sub>2</sub> max before and after training period. The data collected from the subjects was statistically analysed with 't' test to find out significant improvement if any at 0.05 level of confidence. The result of the present study yoga training with pilates exercises significantly improved selected physiological variables of women volleyball players.

**Keywords:** Vo<sub>2</sub> max, yoga training with pilates exercises, women volleyball players

### Introduction

Volleyball is a sport played by two teams consisting of 12 players each on a playing court, divided by a net. The object of the game is to send the ball over the net in order to ground it on the opponent's court and to prevent the same effort by the opponent. The team has three hits or contacts to return the ball. To play volleyball one has to be good at vertical jump, known as explosive power. A volleyball match can be played for five sets which means a match can last about 90 minutes, during which a player can perform 250 -300 actions dominated by the explosive type of strength of the leg muscles. The total number of actions as jumps takes up around 50-60% high speed movements and change of direction in space about 30% and as falls about 15%. The spike and block actions are dominated by the corresponding explosive type of strength which is referred to as a player's vertical jump which is usually the key to winning point. Volleyball is a dynamic, fast-paced game. The purpose of strength training for volleyball is not to build big muscles, but to develop the physical attributes necessary to improve a player's performance. So strength training is very important to volleyball and should not be developed independently of other abilities such as agility, quickness and endurance. When watching a great volleyball player, the one word that comes to the mind is "quick". Everything the player does is short and quick. There are no long drawn out motions like sprinting in other sports. There is simply a succession of explosive bursts that keep the ball in play and control the flow of the game. The quickness that must be focused on, when training a volleyball player is not only quickness from side to side and front to back, but also quickness from up to down. Unique from other sports, volleyball players must be able to quickly change direction from the upward motion of a vertical jump to the downward motion of a point-saving dig (or vice versa). One of the most crucial phases of volleyball is how players perform at the net. To be successful, teams must be able to control play at the net both offensively and defensively. Since this is the case, two of the most valued traits in a volleyball player are height and jumping ability. Both of these traits allow players to greatly influence the game because they can more easily go where the ball is inevitably going...Up! Since there is no way to train height (yet), the focus of training falls squarely on jumping ability. Developing an athlete's jumping skills allows them to elevate quicker and higher in order to take better shots themselves and to block more of their

**Corresponding Author:**  
**Dr. K Kavitha**  
Director of Physical  
Education, Navarasam Arts  
and Science College for  
Women, Arachalur,  
Tamil Nadu, India

opponent's shots. Also, since the same skills that send an athlete up also create quick first steps, improving jumping skills will also positively impact other areas of a volleyball player's performance.

**Methodology**

The purpose of this study was to find out the effect of yoga training with pilates exercises on physiological variables for women volleyball players. To achieve the purpose of the study, 30 men volleyball players were randomly selected from the Navarasam College of arts and science. Their age ranged from 18 to 25 years. They were divided into two equal groups consist of 15 each named control group and

experimental group. The investigator did not made any attempt to equate the groups. The control group was not given any treatment and the experimental group was given yoga training with pilates exercises for three days a week. The experimental group was given training for the period of eight weeks of plyometric training.

Criterion measures

S.no	Variables	Test items	Unit of measurements
1.	Vo2 Max	cooper 12 minutes test	In ml/kg

**Table 1:** Computation of 't' ratio on selected parameters on experimental group and control group (Scores in numbers)

Group	Variables	Mean	N	Std. Deviation Pre	Std. Deviation Post	T ratio	
Vo2 Max	Experimental Group	Pre test	42.38	15	0.29	0.34	13.40*
		Post test	45.64	15			
	Control Group	Pre test	42.24	15	0.36	0.51	0.72
		Post test	42.02	15			

\*significant level 0.05 level degree of freedom (2.14, 1 and 14)

Table I reveals the computation of mean, standard deviation and 't' ratio on selected vo2 max of experimental group. The obtained 't' ratio on vo2 max were 13.60 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 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 vo2 max control group. The obtained 't' ratio on vo2 max were 0.72 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 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.

players. The results of this study indicated that the yoga training with pilates exercises on vo2 max.

The findings of the present study had similarity with the findings of the investigation referred in this study. Meylan *et al.*, (2009) [8] experimented short term yoga programme had a beneficial impact on aerobic performance such as change of direction and jumping. Matavulj *et al.*, (2001) [9] reported that limited amount of yoga training could improve jumping performance in elite junior basketball players.

The results of the present study indicates that the yoga training with pilates exercises programme is effective method to improve vo2 max of women volleyball players. The discrepancy between the results and the results of previous studies might be attributed to several reasons, such as the training experience level of the subjects, the training programme, the intensity used and the duration of the training programme.

**Conclusion**

Based on the results, the following conclusions have been arrived.

It was concluded that eight weeks of yoga training with pilates exercises programme produced significant improvement on vo2 max of women volleyball players.

**References**

1. Greco G, Patti A, Cataldi S, Iovane A, Messina G, Fischetti F. Changes in physical fitness in young female volleyball players after an 8-week in-season pilates training program. *Acta Medica Mediterranea*. 2019;35:3375-3381.
2. Chouhan R, Misra A, Soni R, Joseph A, Umate R. Effectiveness of Plyometrics Along with Pilates Exercises in Increasing Vertical Jump Performance Among Basketball Players. *Cureus*. 2022;14(12).
3. Khatoon M, Thiyagarajan S. Comparative Study to Find out the Effectiveness of Core Strengthening Training (Pilates) versus Plyometric training to Promote Dynamic Balance and Agility in Elite Indian Badminton Players. *Indian J Physiother Occup Ther*. 2021;15(1):85-92.



**Fig 1:** Bar diagram shows the mean values of pre and post test on vo2 max of control and experimental group

**Discussions of Finding**

The present study experimented the effect of yoga training with pilates exercises on vo2 max of women volleyball

4. Fernanda AMD, Yunus M. The Effect of Plyometric Standing Jump Exercise Towards High Jump of Volleyball Players UABV Universitas Negeri Malang. In: The 1st International Scientific Meeting on Public Health and Sports (ISMOPHS 2019). Atlantis Press; 2020. p. 157-162.
5. Veerabhadrapa SG, Baljoshi VS, Kanapure S, Herrur A, Patil S, Ankad RB. Effect of yogic bellows cardiovascular autonomic reactivity. *J Cardiovasc Dis Res.* 2011;2:223-7.
6. Tsai MW, Chie WC, Kuo TB, Chen MF, Liu JP, Chen TT. Effects of exercise training on heart rate variability after coronary angioplasty. *Physiotherapy.* 2006;86(5):626-35.
7. Somwanshi SD, HSM AB, Kolpe DV. Effect of sudarshankriya yoga on cardiorespiratory parameters. *Int J Recent Trends Sci Technol.* 2013;8(1):62-66.
8. Barbie DA, Tamayo P, Boehm JS, Kim SY, Moody SE, Meylan E, *et al.* Systematic RNA interference reveals that oncogenic KRAS-driven cancers require TBK1. *Nature.* 2009 Nov 5;462(7269):108-112.
9. Matavulj D, Kukulj M, Ugarkovic D, Tihanyi J, Jaric S. Effects of plyometric training on jumping performance in junior basketball players. *Journal of sports medicine and physical fitness.* 2001 Jun 1;41(2):159-164.