*International Journal of Computational Research and Development (IJCRD)*
*Impact Factor: 5.015, ISSN (Online): 2456 - 3137*
*(www.dvpublication.com) Volume 8, Issue 1, 2023*

# SYSTOLIC BLOOD PRESSURE EFFECTS DUE TO WEIGHT TRAINING ON TEENAGE VOLLEYBALL PLAYERS

**P. Vignesh*, Dr. B. S. Sha Yin Sha**, Dr. K. Pradeep Kumar*** & Dr. M. Suresh Kumar******

* Ph.D Research Scholar, Jamal Mohamed College (Affiliated to Bharathidasan University, Tiruchirappalli), Tiruchirapalli, Tamil Nadu

** Director of Physical Education, Jamal Mohamed College (Affiliated to Bharathidasan University, Tiruchirappalli), Tiruchirapalli, Tamil Nadu

*** Assistant Director of Physical Education, Jamal Mohamed College (Affiliated to Bharathidasan University, Tiruchirappalli), Tiruchirapalli, Tamil Nadu

**** Director of Physical Education, Ganesar College of Arts and Science (Affiliated to Bharathidasan University, Tiruchirappalli), Pudukkottai, Tamil Nadu

**Cite This Article:** P. Vignesh, Dr. B. S. Sha Yin Sha, Dr. K. Pradeep Kumar & Dr. M. Suresh Kumar, "Systolic Blood Pressure Effects Due to weight Training on Teenage Volleyball Players", International Journal of Computational Research and Development, Volume 8, Issue 1, Page Number 64-66, 2023.

**Abstract:**

The purpose of the study was to find out the effect of weight training on systolic blood pressure among volleyball players. To achieve the purpose of the present study, forty five volleyball players from Jamal Mohamed College, Tiruchirappalli, Tamilnadu, India was selected as subjects at random and their ages ranged from 18 to 21 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Pre test was conducted for all the subjects on resting heart rate. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to weight training with low volume, Experimental Group II was exposed to weight training with high volume and control group was kept at control.The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on resting heart rate. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.The weight training decreased the systolic blood pressure among volleyball players.

**Key Words:** Yogic Practices, Plyometric, Resistance, Volleyball

**Introduction:**

Although some teenagers use strength training to increase muscle size for better looks, weight training is a common part of youth sports and physical fitness programs. Athletes can use their own body weight, weight machines, elastic tubing, or free weights in their strength-training regimens. Specific program goals dictate the type and quantity of weight used as well as the frequency of weight exercises. The benefits of these programs include improved performance in sports and leisure activities, decreased injuries sustained while participating in sports, increased muscle hypertrophy, a favourable improvement in body composition, lower blood pressure and lipid levels, and enhanced cardiopulmonary function. Weight training has become more and more popular lately. In addition to helping athletes improve their muscular strength, power, endurance, and hypertrophy, studies on weight training adaptations have shown benefits for both clinical and general populations (i.e., people with cardiovascular disease, neuromuscular disease, etc.) (Kraemer et al., 2002).

**Methodology:**

The purpose of the study was to find out the effect of weight training on systolic blood pressure among volleyball players. To achieve the purpose of the present study, forty five volleyball players from Jamal Mohamed College, Tiruchirappalli, Tamilnadu, India was selected as subjects at random and their ages ranged from 18 to 21 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Pre test was conducted for all the subjects on resting heart rate. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to weight training with low volume, Experimental Group II was exposed to weight training with high volume and control group was kept at control.The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on resting heart rate. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the

significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

**Results:**

Computation of Mean and Analysis of Covariance on Systolic Blood Pressure of WTWLVTG, WTWHVTG and Control Group

| | WTWLVTG | WTWHVTG | Control Group | Source of Variance | Sum of Squares | df | Mean Square | F |
|---|---|---|---|---|---|---|---|---|
| Pre Test Mean | 133.53 | 133.13 | 133.33 | BG | 1.20 | 2 | 0.60 | 0.49 |
| | | | | WG | 50.80 | 42 | 1.21 | |
| Post Test Mean | 127.60 | 130.00 | 133.20 | BG | 236.80 | 2 | 118.40 | 56.50* |
| | | | | WG | 88.00 | 42 | 2.09 | |
| Adjusted Post Test Mean | 127.53 | 130.06 | 133.20 | BG | 240.70 | 2 | 120.35 | 60.04* |
| | | | | WG | 82.17 | 41 | 2.00 | |

* Significant at 0.05 level  Table value for df 2, 42 was 3.21 and 2, 41 was 3.22

The above table indicates the adjusted mean value of systolic blood pressure of WTWLVTG, WTWHVTG and control group were 127.53, 130.06 and 133.20 respectively. The obtained F-ratio of 60.04 for adjusted mean was greater than the table value 3.22 for the degrees of freedom 2 and 41 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among the experimental and control group on systolic blood pressure. The above table also indicates that both pre and post test means of experimental and control groups differ significantly.

The pre, post and adjusted post test mean values of systolic blood pressure of both experimental and control group are graphically represented in the figure 1.

Figure 1: Shows the Mean Values on Systolic Blood Pressure of WTWLVTG and WTWHVTG and Control Group

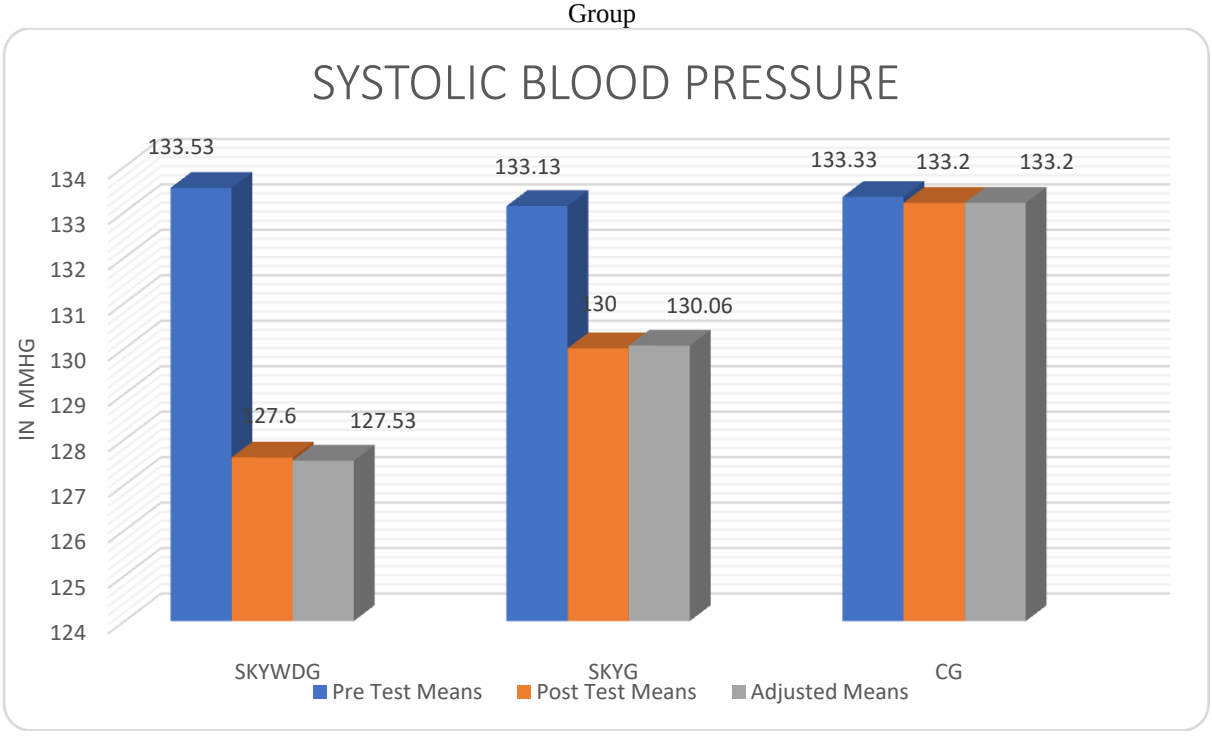


Table 2: Adjusted Mean and Differences between the Means of WTWLVTG, WTWHVTG and Control Group on Systolic Blood Pressure

| WTWLVTG | WTWHVTG | Control Group | Mean Difference | CI Value |
|---|---|---|---|---|
| 127.53 | 130.06 | --- | 2.53* | 1.31 |
| 127.53 | --- | 133.20 | 5.67* | |
| --- | 130.06 | 133.20 | 3.14* | |

Table 2 shows the adjusted means on systolic blood pressure and difference between the means of the WTWLVTG, WTWHVTG and control group. The mean differences of WTWLVTG and WTWHVTG, WTWLVTG and control group, WTWHVTG and control group were 2.53, 5.67 and 3.14 respectively was greater than the CI value 1.31. Hence there exist significant differences between the groups.

**Conclusion:**

The weight training decreased the systolic blood pressure among volleyball players.

**References:**

1. Ashok, K. R., Balamurugan, B. & Karthik, R. V. (2012). Combined Effect of Plyometric Training and Skill Training on the Development of Fitness Related Parameters and Skill Performance variables among Male Volleyball Players. International Journal of Health, Physical Education and Computer Science in Sports. 8.
2. Baechle, T.R. (1994). Essentials of Strength Training and Conditioning. Champaign, IL: Human Kinetics.
3. Barrow, H. M. & McGee, R. M. (1979). A Practical Approach to Measurement in Physical Education, Philadelphia: Lea and Febiger, p. 1.
4. Blair, I. C. (1990). The Promise of Plyometrics. Martial Arts Training.
5. C. A. Vijayarani, Dr. V. Vallimurugan & M. Suresh Kumar (2012). Influence of Yogic Practices on Selected Physiological and Psychological Variables of Adolescent Boys. Recent Research in Science and Technology. 3,1.
6. Eswaramoorthy, A. &Suresh Kumar, M. (2020). Effect of yogic practices and aerobic training on flexibility among physical education students. Purakala, 31, 8, 417-420.
7. Ivin Jabakumar K., Suresh Kumar, M. & Kalidasan. R. (2011). Influence of e-content based coaching on selected Fundamental skills in field hockey. Recent Research in Science and Technology, 3, 1(59-62).
8. Sujitha Paulose & Dr. M. Suresh Kumar (2020). Effect of Progressive Muscular Relaxation Training on Selected Psychomotor Variables among Hockey Players. Alochana Chakra Journal, 9, 5, 2439-2443.
9. Suresh Kumar, M. (2014). Influence of Circuit Training on Selected Physical Fitness Variables among Men Hockey Players**.** International Journal of Recent Research and Applied Studies, 1, 7(6), 16 - 19.
10. Suresh, Kumar M. (2014). Impact of Conventional Training on Dribbling Ability of Novice Hockey Players. Star International Research Journal, 2, 1(07).
11. Suresh, Kumar M. (2014). Influence of Health Related Physical Fitness on Mental Health of Rural School Students. International Journal of Applied Engineering Research, 9, 15, 2917-2924.
12. Suresh, Kumar M. (2014). Skill Tests in Field Hockey - Past, Present & Future. International Journal of Recent Research and Applied Studies, 1, 2(34-36).
13. Suresh, Kumar M. (2017). Influence of Yoga Practices on Blood Pressure among Rural College Girls. Star International Research Journal, 5, 1(3).
14. Suresh, Kumar M. (2019). Comparative Analysis of Core Strength among FootballHockey and Kabaddi Players. Think India Journal, 22, 14, 1261-1264.
15. Suresh, Kumar M. (2019). Effect of yogic practices on selected lung volumes among asthmatic men. The International journal of analytical and experimental modal analysis, XI, VII, 1286-1290.
16. Suresh, Kumar M. (2019). Position wise assessment of body weight among novice and experienced basketball players. The International journal of analytical and experimental modal analysis, XI, XI, 526-531.
17. Suresh, KumarM. (2020). Investigation of the Changes on Selected Physical Fitness Parameters in Response to SAQ Training among College Women Students. Alochana Chakra Journal, 9, 4, 5121-5124.
18. M. Suresh Kumar, A. Dinesh Kumar, Effect of Mental Training on Self Confidence among Professional College Students, International Journal of Recent Research and Applied Studies, Vol 4, No. 12, 2017, 51-53
19. M. Suresh Kumar, A. Dinesh Kumar, A Statistical Approach towards the Effect of Yoga on Total Cholesterol of Overweight Professional College Students, International Journal of Recent Research and Applied Studies, Vol 4, No. 2, 2017, 126-128