Chapter-V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Necessity is the mother of invention. For centuries research has been conducted to develop a better training program to improve motor ability components. The goal of today’s competitive sport is to exhibit one’s excellence and to win. In modern age athletes are trained scientifically to improve their physical fitness, technical and tactical ability to attain better performance. Main features of modern scientific sports training are based on a thorough knowledge of the muscular activity, functional physiology, the mechanics of the body’s adaptation to muscular work and centers around increasing the athletes warming capacity, skill capabilities, as well as developing strong psychological traits.

The objective of this study was to find out the effect of Plyometric training with Pilates exercise on selected motor ability physiological and skill related performance variables among volleyball players. To achieve this purpose, sixty male intercollegiate volleyball players were selected at random from in an around the Warangal district, Telangana. Their age ranged between 18 to 22 years. The selected subjects were randomly divided into two experimental and one control group, each group consist of twenty (n=20) subjects, namely experimental group ‘A’, experimental group ‘B’ and control group ‘C’ respectively.

During the training period, the two experimental groups underwent their respective training programme, four days per week on alternate days for twelve weeks
in addition to the regular physical activities. Group ‘A’ underwent Plyometric training, Group ‘B’ underwent Plyometric with Pilates exercise. Every day the work out lasted for about 45-60 minutes including warm-up and warm down exercises. Group ‘C’ acted as control group who did not participate in any specific training. However, they involved in their regular physical activities.

The following criterion variables muscular strength, explosive power, muscular endurance, coordination, flexibility, cardio respiratory endurance, breath holding time, resting pulse rate, service ability and volleying ability were selected for the purpose of the study. The above criterion variables were assessed by pull-ups, vertical jump, bent knees sit-ups, Scott obstacle race test, sit and reach test, coopers twelve minutes run and walk, nose clip methods, manual methods Russell-Lange volleyball test.

Prior to and after the training program, the subjects were tested for all the criterion variables. The collected data were analyzed statistically by using the analysis of variance (ANOVA) to determine the differences, if any among the groups prior to and immediately after the training period on selected criterion variables separately. Analysis of covariance (ANCOVA) was used to determine the differences, if any among the adjusted post test means on selected dependent variables separately. Whenever the F-ratio for adjusted post-test means was found to significant, the Scheffe’s test was applied as post hoc test to find out paired mean differences. In all cases, 0.05 level of confidence was selected to test the hypotheses.
Conclusions

On the basis of the interpretation of data, the following conclusions were drawn from the study.

1. Muscular strength was significantly improved by the plyometric training group and Plyometric with Pilates exercise group when compared with control group.

2. Muscular strength was significantly improved by the Plyometric with Pilates exercise group than the Plyometric training group.

3. Explosive power was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

4. Explosive power was significantly improved by the Plyometric with Pilates exercise training group when compared with Plyometric training group.

5. Muscular endurance was significantly improved by the Plyometric training group and Plyometric with Pilates exercise training group when compared with control group.

6. Muscular endurance was significantly improved by the Plyometric with Pilates exercise group when compared with control group.

7. Coordination was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

8. Coordination was significantly improved by the Plyometric with Pilates exercise group when compared with Plyometric training group.
9. Flexibility was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

10. Flexibility was significantly improved by the Plyometric with Pilates exercise when compared with Plyometric training group.

11. Cardio respiratory endurance was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

12. Cardio respiratory endurance was significantly improved by the Plyometric with Pilates exercise when compared with Plyometric training group.

13. Breath holding time was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

14. There was no significant difference between Plyometric training group and Plyometric with Pilates exercise group on breath holding time.

15. Resting pulse rate was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.

16. Resting pulse rate was significantly improved by the Plyometric with Pilates exercise when compared with Plyometric training group.

17. Service ability was significantly improved by the Plyometric training group and Plyometric with Pilates exercise group when compared with control group.
18. Service ability was significantly improved by the Plyometric with Pilates exercise training group when compared with polymeric training group.

19. Volleying ability was significantly improved by the Plyometric training and Plyometric training with Pilates exercise group when compared with control group.

20. Combined Plyometric training with Pilates exercise group is better than the isolated Plyometric training group on Volleying ability.

**Recommendations**

During the course of this research, the investigators come across a number of ideas and based on the experiences gained the following suggestions are made for further research.

1. The same study may be conducted with a change of training programme for women volleyball players.

2. The same study may be conducted for the other games like football and handball.

3. A similar study may conduct with Psychological, Biochemical and Physiological variables.

4. A similar study may be conducted with sedentary peoples.

5. A similar study may conduct by adding number of motor fitness and skill related performance variables.

6. A similar study may be conducted with change of training protocol for other games.
BIBLIOGRAPHY


**Bouchers, C. and Malina, R.M. (1992)**. Genetics of physical Fitness and motor physical Fitness and Motor Performance,” Exercise and sports Science Reviews, 11: 3206


**Chaterjee (2003)** “Viva Voce on Medical Physiology (Practical)”, Academic Publisher.


Verhosanski and Razvoj (1979). The development of strength in sport, Translated from Russia, Belgrade: Partizan.


JOURNALS


Karin Vassil and Boris Bazanovk (2012). The effect of Plyometric training program on young volleyball players in their usual training period, 6th *INSHS International Christmas Sport Scientific Conference*.


Khlifa, R., Aouadi, R., Hermassi, S., Chelly, M.S., Jlid, M.C., Hbacha, H. and Castagna, C. (2010). Effects of a Plyometric training program with and


**Komi, P.W. and Gollhofer (1997).** A stretch reflex can have an important role in force enhancement during SSC exercise, *Journal of Applied Biomechanics*, 451-460.


**Ozer, D., Duzgun, I, Baltaci, G., Karacan, S. and Colakoglu, F. (2011).** The effects of rope or weighted rope jump training on strength, coordination and


Rhythm Zhijie Bian, Hongmin Sun, Chengbiao Lu, 1 Li, Yao, Shengyong Chen, and Xiaoli (2013). Effect of Pilates Training on Alpha Rhythm Zhijie Bian College of Physical Education, Yanshan University, Computational and Mathematical Methods in Medicine.


**Subramaniam, P.K, Aditya Kumar Das, Narayanaswamy and David (2012).**


**Tania Patricia Amorim, Filipa Manuel Sousa and Jose Augusto Rodrigues dos Santos (2011).** Influence of Pilates training on muscular strength and flexibility in dancers, 17(4), 660-666


**Vijayalakshmi and Jayabal (2014).** Effects of combination of own body resistance exercises and Plyometric training with yogic practices on cardio respiratory endurance, blood pressure and breath holding time among adolescent school


Wang, Yen-Ting; Lin, Pao-Cheng; Huang, Chen-Fu; Liang, Lung-Ching; Lee, Alex J.Y. (2012). The Effects of Eight-Week Pilates Training on Limits of Stability and Abdominal Muscle Strength in Young Dancers, World Academy of Science, Engineering and Technology, 66, 716.

Internet Resources

www.medical dictionary.com
wiki.answer.com
www.tripod.com
www.grmbetta.com
www.wetside barebell.com
www.sales@jumpusa.com