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IMPACT OF EIGHT WEEKS AEROBIC EXERCISE TRAINING ON AGILITY AND STRENGTH AMONG VOLLEYBALL PLAYERS OF RAICHUR UNIVERSITY KARNATAKA

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Abstract

The present study was undertaken to examine the *impact of eight weeks of aerobic exercise training on agility and strength among male volleyball players of Raichur University, Karnataka*. Fifty (N=50) male volleyball players, aged 18 to 25 years, were purposively selected for the study. A single-group experimental design with pre-test and post-test was employed. The subjects participated in an eight-week aerobic training program comprising running, circuit drills, skipping, and endurance-based aerobic exercises conducted five days per week under supervised conditions. Agility and strength were measured using the *Zig-Zag Run Test* and *Pull-Up Test* respectively, before and after the training intervention. The data were analyzed statistically using mean, standard deviation, and *t-test* to compare the pre- and post-test scores. The results revealed a significant improvement ($p < 0.05$) in both agility and muscular strength following the aerobic exercise program. The findings demonstrate that regular aerobic training enhances essential physical fitness components that contribute to improved volleyball performance. It is concluded that integrating systematic aerobic exercises into volleyball training schedules can effectively improve agility, muscular strength, and overall athletic efficiency among university-level players

Keywords: Aerobic Exercise, Agility, Strength

INTRODUCTION

Aerobic Exercises The term Aerobics was coined by Kenneth Cooper in the late 1960's who strongly believed that the reasonably strong firm workout to music could produce beneficial results for a person's cardiovascular endurance system. As one experiences the state of quickened breathing, the concomitant state of elevated pulse and cardiac output as a result of the exercise, metabolism is raised and the heart – the most important muscle in the human body is given a decent workout.

Aerobic exercise is the most important form of exercise for health since it increases the efficiency of heart rate, blood circulation and muscle strength. By doing exercise, the whole system of the body carries oxygen rich air which enters through the organs and tissues of the muscles which is called "the aerobic system" and for this reason, training the system for stamina is called aerobic training. A typical aerobic exercise work out consists of 8 to 10 minutes of stretching, calisthenics and low intensity exercise. This is followed by 15 to 45 minutes of their high or low impact aerobic dancing according to the target training intensity. The 10 minutes cool down period usually includes more stretching and callisthenic type exercise (Hayward, 1989)

Types of aerobic protocols evaluated

- **Continuous moderate-intensity aerobic training (MICT):** Typical sessions of 20–45 minutes at 60–75% HRmax—improves VO₂max and endurance but needs to be balanced with power training to avoid interference with strength/power adaptations.



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- **High-intensity interval training (HIIT):** Short repeated bouts (e.g., 30 s work / 30–60 s rest) or sprint-interval formats produce similar or greater aerobic gains in less time and show strong transfer to repeated-sprint/jump ability. HIIT is often favored in team-sport contexts because it better mimics intermittent demands.
- **Sport-specific intermittent conditioning:** Drills combining technical actions with intermittent aerobic/anaerobic loads (e.g., shuttle runs with ball work) produce both physiological and skill-related improvements and high ecological validity

REVIEWS OF RELATED LITERATURE

Ghosh (2004)

Ghosh analyzed the physiological responses of athletes undergoing aerobic conditioning. The study highlighted that aerobic training enhances oxidative enzyme activity, increases capillary density in muscles, and reduces lactate accumulation during exercise.

Conclusion: Aerobic exercises enhance endurance and delay fatigue, allowing players to sustain high-intensity efforts for longer durations.

Bishop et al. (2003)

In a study on team sport athletes, Bishop and colleagues examined the link between aerobic fitness and repeated-sprint ability. They found that players with higher aerobic capacity could perform repeated high-intensity sprints with less performance decrement.

Conclusion: Aerobic conditioning plays an indirect yet crucial role in improving repeated-sprint and intermittent performance in team sports.

RESEARCH METHODOLOGY

Statement of the problem

The research study entitled “Impact of Eight Weeks Aerobic Exercise Training on Agility and strength Among Volleyball players of Raichur University Karnataka”

Significance of the study

The present research study tried to find out the impact of the aerobic training on the sports performance among the Volleyball players. fifty male players were selected than conducted pre-test of sports performance after the test eight weeks aerobic training was conducted with scientific method, every day two hours session, after the aerobic training the post test was conducted to measure the sports performance among the sample of the study.

The objectives

- ❖ To conduct the pretest of motor fitness test among the volleyball players to measure the sports performance.
- ❖ To conduct the aerobic training session for the sample of the study
- ❖ To conduct the post motor fitness tests to check the impact of aerobic training
- ❖ To compare the pre and post motor fitness performance by Volleyball players of Raichur University.

The Hypothesis

- ❖ There would be impact of aerobic training on the sports performance among Volleyball players.



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❖ There would be significance difference in pre and post motor fitness performance among the volleyball players.
The variables

The experimental study having the following variables

- ❖ Independent variable - Aerobic training
- ❖ Dependent variables - sports performance components

Sample

The researcher selected fifty volleyball players with same age group, the players were provided the needed information about the research study. the aerobic training session was conducted for eight weeks in between pre and post-test of sports performance components of the research study.

Tools of the study

The following are the motor ability tests have been used in the study.

Motor Ability Test (AAHPER)

Sl.No.	Motor Ability	Test	Unit of Measurement
1.	Agility	Shuttle Run 10x4 yards	Time
2.	Strength	Pull ups	Score

Statistical techniques

The suitable techniques will be used to measure the effect of independent variables on the dependent variables, techniques like **mean, SD, t test**, will be used to measure or compare the pre and post results of the sample groups.

ANALYSIS AND INTERPRETATION OF DATA

THE TABLE NO 1 SHOWING THE IMPACT OF AEROBIC TRAINING ON SPORT PERFORMANCE COMPONENTS OF VOLLEYBALL PLAYERS OF RAICHUR UNIVERSITY (N-50)

Component	Test	N	Mean	SD	t values
Agility	Pre Test	50	14.28	1.154	6.850**
	Post Test		11.82	1.881	
Strength	Pre Test	50	12.24	1.085	4.988**
	Post Test		19.88	2.880	

Significant at 0.05 levels



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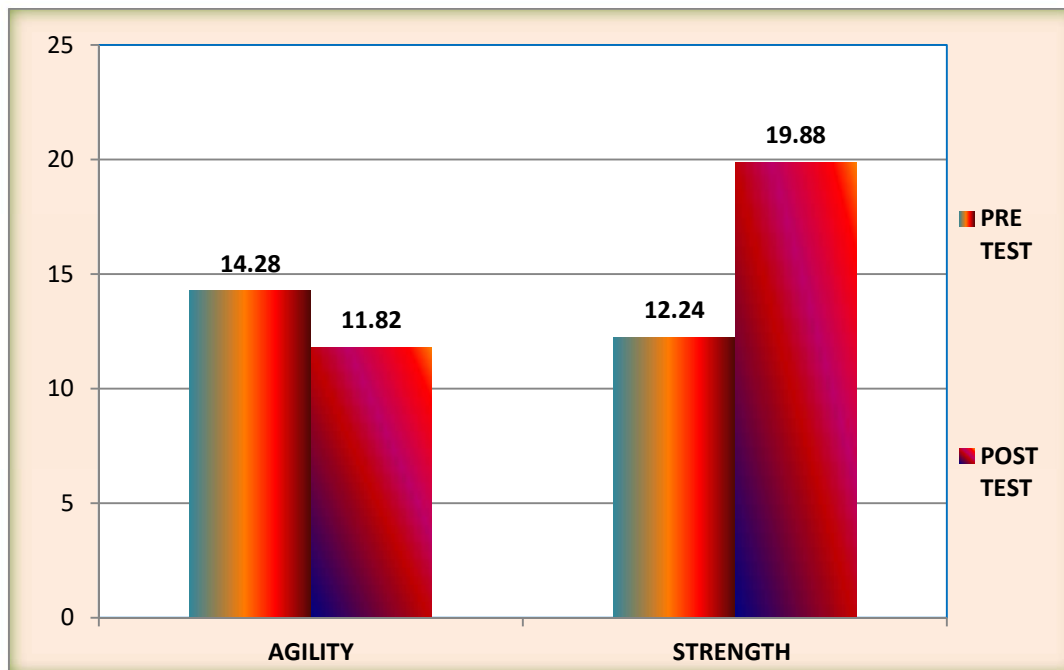


The table showing the impact of aerobic training on the sports performance among the volleyball players of the study. In agility test shuttles run the pre test mean score is 14.28. the SD is 1.154. the post test mean score is 11.82, the SD is 1.881, the calculated t value is 6.850** which is statistically significant.

In strength pull ups test the pre test mean score is 12.24, the SD is 1.085. the post test mean score is 19.88, the SD is 2.880, the statistically calculated t value is 4.988** which is significant at 0.05 levels.

The research study showing that the aerobic training has the positive impact on the sports performance among the Volleyball players of Raichur University.

THE GRAPH SHOWING THE MEAN DIFFERENCE OF PRE AND POST SPORTS PERFORMANCE AMONG VOLLEYBALL PLAYERS



SUMMARY AND CONCLUSION

The aerobic training has the positive influence on the sports performance among the Volleyball players of the present study and it is very important physical fitness training tool to improve the physical abilities

Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness (flexibility, muscular strength and cardio – vascular fitness). It is usually performed to music and may be practiced in a group setting led by an instructor, although it can be done solo and without musical accompaniment. With the goal of preventing illness and promoting physical fitness, practitioners perform various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and complexity. Aerobics classes may allow participants to select their level of participation according to their fitness level.

Conclusion

- ❖ The aerobic training has the positive impact on the sports performance among Volleyball players of the study.
- ❖ There is significant difference in motor fitness components between pre and post test of performance.



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- ❖ The aerobic training is the most scientific method to improve the sports performance among Volleyball players of the study.

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