

THE IMPACT OF INTERMITTENT TRAINING AND AEROBIC EXERCISES ON SELECTED PERFORMANCE VARIABLES IN COLLEGE WOMEN VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of this study was to determine the impact of intermittent training and aerobic exercise on performance variables in collegiate women volleyball players. The study's sample size included 45 volleyball players from intercollegiate teams. They would be divided into three groups of fifteen each (n=15). Group I performed mini-session aerobic activities ; Group II did intermittent training ; and Group III served as the control group. The programme was held at the E.M.G.Yadava Women's College in Madurai, Tamil Nadu, India. All subjects were adequately informed about the nature of the experimental methods, and they consented to participate in this study. The subjects' ages ranged from 17 to 22 years. The dependent variables for the current study were volley pass and forearm pass, both of which were quantified numerically using Helman's volleyball test. Each individual provided data both before and after the training session. The instruction was delivered three times a week (on alternate days). The subjects also provided their written consent. To evaluate whether there were any significant differences between the groups for each variable separately, an analysis of covariance (ANCOVA) was utilised. When the « f » ratio of the adjusted post-test means was found to be significant at the 0.05 level of confidence, Scheffe's test was applied as a post-hoc analysis. The results revealed that the intermittent training and aerobic workouts were devised to improve the volley pass and forearm pass among women volleyball players during the post-training assessment. According to statistics, the intermittent training group outperformed the aerobic and control groups. Based on the data, it is concluded that the planned intermittent training package could have a significant favourable impact on the volley and forearm pass of women volleyball players.

Key Words: *Intermittent Training, Aerobic Exercises, Volley Pass, Forearm Pass and Volleyball Players.*

INTRODUCTION

Intermittent exercise is a phrase used to describe a number of physical training methods. The terms intermittent, which refers to stopping and starting at regular intervals, and interval as in interval training, are used interchangeably. Interval training is typically carried out as a high-intensity fitness activity. Aerobics comprised scientific exercise routines like jogging, walking, swimming, and bicycling when the general population's rising frailty and idleness created a perceived need for more exercise. It became a bestseller. Cooper's research established the scientific foundation for practically all modern aerobics routines, the majority of which are based on oxygen-consumption equivalency.

Healthy competition necessitates innovation and removes the hurdle of complacency off the path to progress and success. Without competition, training is worthless today. A sport training is driven by a competitive mindset. Each country strives to outperform the other, reach elite performance, and claim victories in international tournaments. Today's records have shown to be lower than tomorrow's performance.

Sports need the development of motor skills. Strategies and efficiency are taught through practice, and a player's success is determined by his performance in his sport. As an investigator, I attempted to assess the effects of mini-session aerobic practice and physical exercise (intermittent training) on selected performance parameters of female collegiate volleyball players. Almost every physical activity has components of force, rapidity, duration, and range of motion. Resistance-overcoming exercises are strength-based. Speed exercises promote quickness and high frequency. Endurance exercises involve extensive distances, durations, or several repetitions. Maximum range of motion leads to flexibility in movement. Coordination exercises involve complex movements. Any physical exercise can cause anatomical, physiological, biochemical, and psychological changes. The efficiency of a physical activity is determined by its time and repetitions (volume), load and velocity (intensity), and frequency of execution (density). When arranging the dynamics of training, these elements, known as training variables, should be

considered. Throughout the training phases preceding a competition, the component emphasising meeting the planned performance aim should be identified. Speed and power sports are typically more intense, while endurance sports are more volume-based.

When we are playing volleyball, skilled athletes only provide high speed, flexibility, and incredible energy. A sportsman's ability to pass, play tough with teammates, and block opponents is crucial in all games. A sportsman must have adequate abilities and physical fitness in order to succeed as a player and as a team member. Our athletes performed poorly in many national and international tournaments, which became a serious concern for trainers, coaches, physical educationists, sports scientists, and researchers. These abilities are critical to a sportsman's success. The games require players to adhere to specific body requirements and methods. We have been unable to discover a solution to assist our athletes in achieving peak performance in their respective fields. A sportsman's well-built body and anthropometric characteristics alone will enable him achieve peak performance in his sport. Finally, for sports that need intricate skills, training complexity is critical. The following volleyball performance measurements were chosen as dependent variables in this study.

METHODS AND MATERIALS

The purpose of this study was to determine the impact of intermittent training and aerobic exercise on performance variables in collegiate women volleyball players. The study's sample size included 45 volleyball players from intercollegiate teams. They would be divided into three groups of fifteen each (n=15). Group I performed mini-session aerobic activities; Group II did intermittent training; and Group III served as the control group. The programme was held at the EMG Yadava Women's College in Madurai, Tamil Nadu, India. All subjects were adequately informed about the nature of the experimental methods, and they consented to participate in this study. The subjects' ages ranged from 17 to 22 years. The dependent variables for the current study were volley pass and forearm pass, both of which were quantified numerically using Helman's volleyball test. Each individual provided data both before and after the training session. The instruction was delivered three times a week (on alternate days). The subjects also provided their written consent.

STATISTICAL TECHNIQUE

The impact of intermittent training and aerobic activities on specific performance variables in college women volleyball players was evaluated using the following statistical techniques: To evaluate whether there were any significant differences between the groups for each variable separately, an analysis of covariance (ANCOVA) was utilised. When the "f" ratio of the adjusted post-test means was found to be significant at the 0.05 level of confidence, Scheffe's test was applied as a post-hoc analysis.

TRAINING PROGRAMME

The control group participated simply in their regular intermittent training and aerobics exercise everyday tasks. These experimental groups (I and II) underwent twelve weeks of intermittent training and aerobic exercises, respectively. Then instruction was provided three days each week (alternating days). Each training session lasted 40-60 minutes. The training session was set for the morning between 6 and 7 a.m.

RESULTS

VOLLEY PASS

Table I shows the results of the analysis of covariance on volley pass of the pre-test, post-test, and adjusted post-test mean scores of the intermittent training, aerobic exercise, and control groups.

AN ANALYSIS OF COVARIANCE OF THE INTERMITTENT TRAINING, AEROBIC EXERCISES, AND CONTROL GROUP ON VOLLEY PASS

Test	Intermittent Training Group	Aerobic Exercises Group	Control Group	SOV	Sum of Squares	Df	Mean Square	'F' Ratio
Pre- Test Mean	10.25	10.40	10.65	Between Within	20.25 175.40	2 28	10.13 6.26	1.62

Post-Test Mean	17.20	14.10	10.68	Between Within	505.30 196.15	2 28	252.65 7.01	36.04
Adjusted Post-Test Mean	17.28	14.13	10.73	Between Within	56.50 16.50	2 27	28.25 0.61	46.31

Table I

Significant at 0.05 level of confidence

The table value required for significance at 0.05 level of confidence with 2 and 28, 27 were 3.22, 3.23 respectively.

According to table-I, the pre-test, post-test, and adjusted post-test means of volley pass in groups I, II, and III were 10.25, 10.40, 10.65, and 17.20, 14.10, 10.68, with 17.28, 14.13, and 10.73, respectively. The acquired f-ratio for pre-test, post-test, and adjusted post-test were 1.62, 36.04, and 46.31, respectively, with the post-test and adjusted post-test mean exceeding the table values of 3.22, 3.23 for df 2, and 28 and 27 needed for significant at the 0.05 level of confidence.

The Scheffe's test was used as a post-hoc test to determine which of the paired means had significant differences, and the results are shown in Table II below.

THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON VOLLEY PASS

Intermittent Training Group	Aerobic Exercises Group	Control Group	Mean Difference	Confidence Interval
17.28	14.13	-	3.15*	0.47
17.28	-	10.73	6.55*	0.47
-	14.13	10.73	3.40*	0.47

Table II

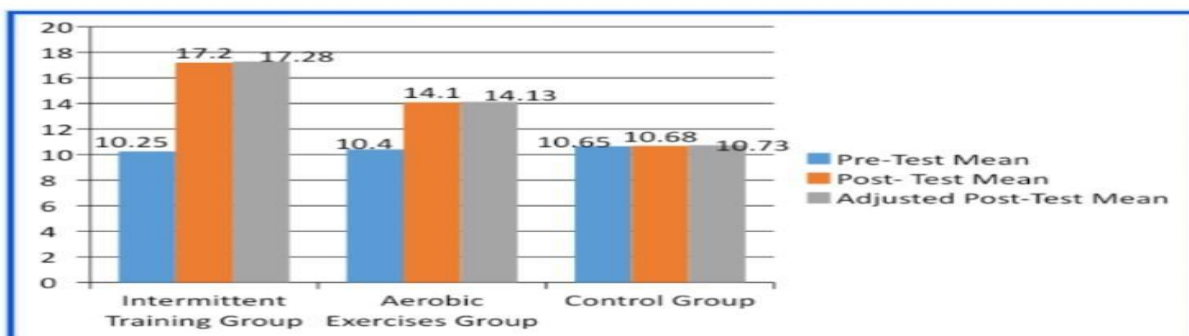
*Significant at 0.05 level of confidence

Table II shows that the mean volley pass values for Groups I and II, Group I and III, and Group III and II are 3.15, 6.55, and 3.40, respectively. These values exceed the confidence interval value of 0.47 at the 0.05 level. According to the findings of this study, there are significant differences between Group I and II, Group II and III, and Group II and III in terms of volley passes.

The information presented above expresses that Group I demonstrated that it was better at volley passing. The pre-, post-, and modified post-test mean values of Groups I, II, and III on volley pass are clearly shown in Figure 1.

Figure 1 This diagram shows the mean values of pre-test, post-test and adjusted post-test on Volley Pass FOREARM PASS

Table III demonstrates the results of the covariance analysis on forearm pass for the pre-test, post-test, and adjusted



post-test mean scores of the intermittent training, aerobic exercise, and control groups.

**AN ANALYSIS OF COVARIANCE OF THE INTERMITTENT TRAINING GROUP,
AEROBIC EXERCISES GROUP AND CONTROL GROUP ON FOREARM PASS**

Test	Intermittent Training Group	Aerobic Exercises Group	Control Group	SOV	Sum of Squares	Df	Mean Square	'F' Ratio
Pre- Test Mean	11.30	11.80	11.90	Between Within	30.78 225.10	2 28	15.39 8.04	1.91
Post-Test Mean	17.80	15.45	11.89	Between Within	440.90 155.56	2 28	220.45 5.56	39.65
Adjusted Post-Test Mean	17.92	15.53	11.96	Between Within	35.10 10.80	2 27	17.55 0.40	43.88

Table III

Significant at 0.05 level of confidence

The table value required for significance at 0.05 level of confidence with 2 and 28, 27 were 3.22, 3.23 respectively.

Table III displays that the pre-test, post-test, and adjusted post-test means of forearm pass in groups I, II, and III were 11.30, 11.80, 11.90, with 17.80, 15.45, 11.89, and 17.92, 15.53, and 11.96, respectively. The acquired f-ratio for pre-test, post-test, and adjusted post-test were 1.91, 39.65, and 43.88, respectively, with the post-test and adjusted post-test mean exceeding the table values of 3.22, 3.23 for df 2, and 28 and 27 necessary for significant at the 0.05 level of confidence. The Scheffe's test was used as a post-hoc test to determine which of the paired means had significant differences and the results are shown in Table IV below.

THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON FOREARM PASS

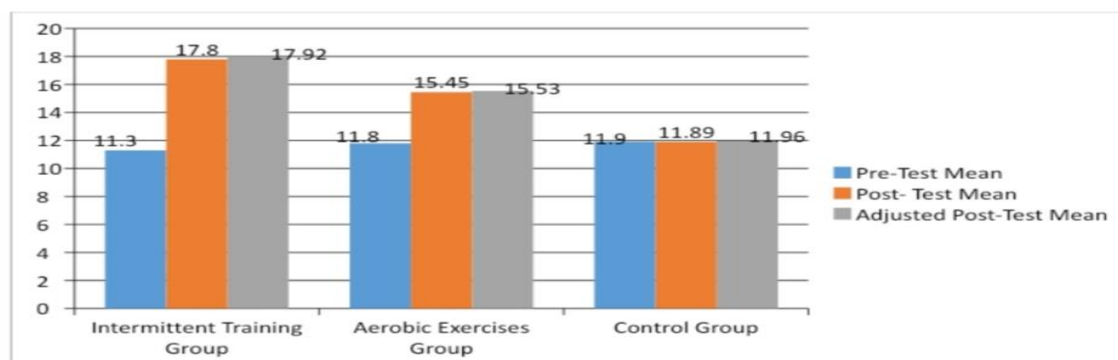
Intermittent Training Group	Aerobic Exercises Group	Control Group	Mean Difference	Confidence Interval
17.92	15.53	-	2.39*	0.39
17.92	-	11.96	5.96*	0.39
-	15.53	11.96	3.57*	0.39

Table IV

*Significant at 0.05 level of confidence

Table IV exhibits that the mean forearm pass values for Groups I and II, Groups I and III, and Group III and II were 2.39, 5.99, and 3.57, respectively. These values may exceed the confidence interval value of 0.39 at the 0.05 level of confidence. The findings of this study revealed that significant differences exist between Groups I and II, Group II and III, and Group II and III, respectively. This information expresses that Group I demonstrated superior achievement in the forearm pass. The pre-, post-, and adjusted post-test mean values for Groups I, II, and III on the forearm are clearly shown in Figure 2.

Figure -2: This diagram shows the mean values of pre, post and adjusted post-test on Volley Pass



RESULTS AND DISCUSSION

The current data imply that both intermittent training and aerobic workouts improve volley pass and forearm pass performance. The findings revealed that intermittent training is more beneficial than aerobic exercise in enhancing volleyball pass and forearm pass in women volleyball players. Tanisho (2009) investigated the ball game and concluded that players should improve their endurance capacity through high-intensity intermittent exercise, as VO₂max or continuous exercise testing alone are insufficient. Seshagiri (2013) indicated that the combination of high-intensity intermittent training and weight training is effective enough to improve aerobic and anaerobic capacity while slowing the rate of decline in sprint among male handball players. Rajakumar (2014) demonstrated that the continuous running group outperformed the intermittent training group and the control group in improving 1500-meter running performance. These findings are consistent with studies by sports scientists John Parthiban (2012), Kodama et al. (2007), and Narayani (2010).

CONCLUSION

The results revealed that the intermittent training and aerobic workouts were devised to improve the volley pass and forearm pass among women volleyball players during the post-training assessment. According to statistics, the intermittent training group outperformed the aerobic and control groups. Based on the data, it is concluded that the planned intermittent training package could have a significant favourable impact on the volley and forearm pass of women volleyball players.

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