

RESEARCH ARTICLE

The effect of physical fitness training on the performance of youth volleyball project players: the case of ana Lemo woreda, Hadiya zone, Ethiopia

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Abstract

The main objective of the study was to examine the effect of physical fitness training on the performance of youth volleyball project players: the case of ana lemo woreda, Hadiya zone. census sampling technique was used to select 24 players aged 15 to 16 years from ana Lemo woreda volleyball project players. The article focused on selected physical fitness variables. Those subjects under this study took part in experimental design pre and post-test on both tests from March 01/03/2021 to May 01/05/2021, 2 days per week for 3 months and 40 minutes precession. The physical fitness variables selected for the study were: cardiorespiratory endurance (1.6km run in min test), muscular endurance (sit-ups reps/60seconds), muscular strength (modified push-ups reps/30 seconds), power (standing long jump in meter), and agility (4x10 m shuttle run in seconds). Data were analyzed by using SPSS paired-samples t-test with a pairwise comparison of means at a 95% confidence interval. The results indicated that there were significant improvements in performance on selected physical fitness variables due to the effect of physical fitness training with active rest ($p < 0.05$). This study confirmed that physical fitness training with active rest was significant to improve the physical fitness variables. The main finding of the study was trainee project players have discovered positive outcomes towards physical fitness variables. The study also illustrates that the health and fitness level of participants can be improved as a result of the physical fitness training program.

Keywords: Performance; Cardiorespiratory endurance; Muscular strength, Muscular endurance, power, and agility

Introduction

The sport of volleyball of the project level comprises mainly of athletes of uncharacteristic size cardiovascular endurance, speed, agility, power, strength endurance level of fitness helped many athletes become strong and faster. Athletes spend tons of their time and energy trying to enhance their physical performance. strength and conditioning coaches have helped these athletes to achieve a high level of performance through resistance training. this training is used to help on improving the athlete's strength, power, flexibility, and speed. the improvement of all or one of these factors may help in enhancing the athlete's performance on his or her respective playing court. (Bangsbo, 2007) To cope with the physical requirements and to maintain technical standards throughout a match, the players must have a high level of fitness. playing suits frequently allows to hold the health degree of the player, however extra health It is

necessary to obtain education. Volleyball instruction must be tailored to the sport, with a focus on executing the workout with a ball and separate physical education without the ball. The use of the ball during training ensures that the muscles used in volleyball are specifically trained, and it all checks the players' motivation. 2007 (Bangsbo) The observing athlete may also provide statistics on the players' physical characteristics to the educators. These figures can be used to forecast whether or not an athlete gamble. These figures could provide information to the coach about the players' physical condition. The data can then be analyzed to aid in making an accurate appraisal of the players. Volleyball players' physical qualities are assessed using a battery of different tests meant to examine an athlete's ability to accomplish a specific skill or fitness. These exams are frequently used by coaches to assess not only athletic ability but also predictors of probable ailments. during the season. coaches need some types of testing protocol to help in the evaluation process of their athletes This testing method should involve all aspects of training, as this will

reveal the player's strengths and limitations. To guarantee an accurate evaluation, testing must be done securely and properly (Ebben, 1999). Volleyball performance tests can be created to include the technical, tactical, physiological, and physical aspects of the sport (Bangsbo,2004) Clean targets must be described before choosing a check because testing must be conducted with a purpose. There are several good reasons for testing players, including evaluating whether a player is ready to play a competitive match, studying the effects of the training program, motivating players to train hard, giving players objective feedback, making players more aware of the goal of training, and planning short-long term training programs. To fulfill these purposes, it is important that the test used is relevant to volleyball and resembles the condition during ma. (Bangsbo,2004). Fitness testing should take place near the end of the offseason, right before the start of your preseason training. This is so you can organize your preseason training and see how much progress you've made over the preseason. Your second round of testing should happen right before the start of the season. The fitness tests you take after that have two goals. First, you can compare and see how much your fitness has improved, giving you confidence coming into the season, and second, you can assess where you are and how you might want to change your training to work on any areas that need improvement. It's also a good idea to undertake some testing in the middle of the season to ensure that you're maintaining your pre-season gains and to make any required adjustments to your training depending on the results. Coaches require some form of testing program to assist them in the evaluation of their players. This testing method should involve all aspects of training, as this will reveal the players' strengths and limitations. Checking out must be done with a goal in mind, so clear objectives must be defined before selecting a check. There are several good reasons for testing players, including evaluating whether a player is ready to play a competitive match, studying the effects of the training program, motivating players to train hard, providing objective feedback, making players more aware of the goal of training, and planning short- and long-term training programs. As a result, the researcher began volleyball performance testing, and to what extent fitness training can be applied in ana lemo woreds Club for young volleyball players. The purpose of this study was to evaluate the impact of a fitness training program by comparing the player's fitness level to the norms. Physical fitness improves as a result of the hard training provided for the tournament. Any athlete's overall performance levels are expected by fitness aspects. There are a number of conditions that must be met in order to achieve peak overall performance. Physiological, environmental, mental, and sociological factors are among them. As a result, this book is written with the help of the

investigator to provide them with an understanding of the bodily health education software for the development of a certain bodily health (cardiorespiratory health, muscular endurance, muscular strength, power, and agility).

Objectives of the study

To investigate the effect of physical fitness training on the performance of youth volleyball project players in the case of Ana lemo woreda, Hadiya zone, Ethiopia.

Identify the significance of physical fitness training program on participants in enhancing cardiorespiratory, muscular strength, muscular Endurance, power, speed, and agility fitness variables?

Materials and methods

This study attempted to explore the effects of a physical fitness training program on selected physical fitness variables of project players. The Census sampling technique was used to select 24 players aged 15 to 16 years from ana lemo woreda volleyball project players. The main objective of the study was to investigate the effect of physical fitness training on the performance of youth volleyball project players: the case of ana lemo woreda, Hadiya zone. The articles focused on selected Physical Fitness variables that are cardiovascular endurance, speed, agility, and power. The subjects under this article took part in experimental design pre and post-test on both tests from March 01/03/2021 to May 01/05/2021, 2 days per week for 3 months and 40 minutes precession collected the data. The physical fitness variables selected for the study were: cardiorespiratory endurance (1.6km run in minutes), muscular endurance (sit-ups reps/60seconds), muscular strength (modified push-ups reps/30 seconds), power (standing long jump in meter), and agility (4x10 m shuttle run in seconds). Data were analyzed by using SPSS (version 20) paired-samples t-test with a pair-wise comparison of means at a 95% confidence interval. The results indicated that there were significant improvements in performance on selected physical fitness variables due to the effect of physical fitness training with active rest ($p < 0.05$). This study confirmed that physical fitness training with active rest was significant to improve the physical fitness variables. The main finding of the study was trainee project players have discovered positive outcomes towards physical fitness variables. The study also illustrates that the health and fitness level of participants can be improved as a result of the physical fitness training program.

Results

Trainee Physical Fitness Pre-Test and post-test Results (health-related)

Table 1 below shows the pre-test result of the Comparison group on health-related physical fitness variables such as cardiorespiratory endurance(m),muscular strength(rep/30second), and muscular endurance (re/60second).

Table 1. Health-Related Physical Fitness Pre-Test and post-Test Result.

| Pre-test | | | | |
|---------------------|-------|------|---------|-------|
| Dependent Variables | Mean | SD | t-value | Sig |
| CVE | 9.52 | 0.89 | 2.54 | 0.014 |
| M S | 7.17 | 2.42 | 3.65 | 0.001 |
| M E | 25.16 | 5.14 | 2.71 | 0.009 |

Note: CRE=cardio respiratory endurance, MS=muscular strength, ME=muscular endurance, $p < .05^*$ = Significant and the data in the form of Mean \pm SD

The data Table 1 showed that there was a significant improvement in performance on cardiorespiratory endurance, muscular strength, and endurance of the project trainee. The rationale behind the improvement in performance was due to the physical fitness training program which was conducted for 12 weeks. The pre-test means value for cardiorespiratory endurance was (9.52).

| Post-test | | | | |
|---------------------|-------|-------|---------|-------|
| Dependent Variables | Mean | SD | t-value | sig |
| Agility | 12.86 | 0.406 | 1.80 | 0.000 |
| Power | 1.54 | 0.12 | 3.39 | 0.001 |

This showed that the project trainee was at a hazardous health level according to the standard for their age category. Therefore, they must work hard to improve their performance capacity immediately; if not, they may suffer an injury and long-term damage. The post-test mean value of cardiorespiratory endurance was (8.93) indicating that they were at a cautious health level. But there was a progressive improvement of cardiorespiratory endurance

throughout the training due to the physical fitness training program.

The pre-test means value for muscular strength was (7.17) showed that those project trainees were at a cautious health level. Therefore, they must work hard to improve this performance capacity immediately; if not, they go to hazardous health level and they may suffer an injury and long-term damage might already be underway: Whereas, post-test mean values for muscular strength are (9.71) indicated that they were at an enhanced health level. This shows they go in the right direction. Due to this, they should do some exercises to improve this performance capacity. But there was progressive improvement in muscular strength performance which was indicated by the mean difference between pre and post-test. The findings on muscular strength revealed that there was a significant mean difference between the tests. The mean difference in muscular strength was due to the physical fitness training exercises in which they were engaged for 12 weeks.

The pre-test means the value of muscular endurance was (25.16). Showed that those project trainees were at a

| Post-test | | | | |
|---------------------|-------|------|---------|-------|
| Dependent Variables | Mean | SD | t-value | Sig |
| CVE | 8.93 | 0.68 | 2.54 | 0.014 |
| M S | 9.71 | 2.38 | 3.65 | 0.001 |
| M E | 28.64 | 3.60 | 2.71 | 0.009 |

cautious health level. Therefore, they must work hard to improve this capacity for performance However, the participants' performance improved significantly once the post-test mean values were calculated. The post-test mean values were (28.64). This demonstrated that the physical fitness training program improved their muscle endurance performance capacity. This mean difference between tests indicated that muscle endurance performance improved over time during the 12-week training period.

In the bellow table 2 the results of the paired t-test analyses related to the interpretation of the total skill-related fitness scores for the students toward their circuit training is listed within mean and standard deviation for each of the variables by using rating scales after (post) training. So, the high mean score indicates the highest degrees of fitness improvement in power. But in agility, the low mean value shows improvement. The results are presented as follow:

Table 2. Trainee pre-test and post-test results on skill-related physical fitness

Note $< .05, ^*$ = Significant and the data in the form of Mean \pm SD

The results of Agility and Power represent skill-related physical fitness, as shown in table 2. From pre- to post-tests, there was a considerable improvement in project trainee agility and power, as seen in table 2. Conversion's pre- and post-training test mean values in agility were (12.86). Showed that at the start of the training program, those project trainees were in good health. As a result, individuals must strive promptly to improve/enhance their performance ability; else, they risk deteriorating their health. And this demonstrates the danger to their health. The post-test mean values, on the other hand, were (12.14), indicating that they were in better health. These average numbers suggested that they were on the correct track in terms of health. There was a considerable performance improvement in agility, according to the data. The increase in agility Their excellent performance level was aided by the twelve-week physical fitness training program in which they were engaged. The greater the influence of training on speed, direction change, and acceleration, the less time spent covering distance is spent, indicating an increase in agility. The above table demonstrates the increase in agility over the course of 12 weeks of training due to a decrease in time. The post-mean test's value was (1.65). revealed that their health was better than it had been previously. As a result, folks should get some exercise to increase their performance capacity. However, throughout the period of 12 weeks of training, the mean difference between pre- and post-tests demonstrated a progressive improvement in power performance. The 12-week physical fitness training program was the primary cause behind their improved power performance. The standing long jump was used to gauge the individuals' strength. In the data on power, the paired samples t-test demonstrated statistical significance. The significant mean difference in power was due to the 12 weeks of physical fitness training exercises in the regular training. The larger the distance covered during a standing long jump, the greater the influence of training on power.

Table 3. Health-related physical fitness pre and post-test in one place.

Note- CRE=cardio respiratory endurance, MS=muscular strength, ME=muscular endurance, $p < .05^*$ = Significant and the data in the form of Mean \pm SD

Table 3 shows that the project trainee's performance in cardiorespiratory endurance, muscular strength, and endurance all improved significantly. The physical fitness training program, which lasted for 12 weeks, was the reason for the improvement in performance. The mean value for cardiorespiratory endurance before the test was (9.52). This showed that the project trainee was at a hazardous health level according to the standard for their age category.

Therefore, they must work hard to improve their performance They must rapidly return to full capability; else, they risk harm and long-term damage. The post-test mean rate of cardiorespiratory staying was (8.93), showing that they were in good physical condition. However, due to the physical fitness training program, there was a steady improvement in cardiorespiratory endurance throughout the training. This conclusion was backed up by research (Newport and Laliberte, 2001).They concluded that appropriate physical activity could build cardiovascular fitness in all types of people. Adaption to exercise include increased heart rate, deep respiration, improved ventilation ratios in the lungs; an increase in heart size and rate which lead to covering the given distance In minimal time. These elements mixed with metabolic muscular adjustments enhance the effectiveness of responses to exercising which in flip will increase overall performance (ACSM, 1995). Inlet al. (2001) concluded of their look at that cardio-respiration persistence relies upon at the cap potential of the lungs to supply oxygen from the surroundings to the bloodstream; the hearts capability to pump blood; the cap potential of the frightened gadget and blood vessels to alter blood flow; the muscle mass capability to generate energy and functionality of the frame's chemical structures to apply oxygen and manner fuels for exercising. The pre-test means value for muscular strength was (7.17) showed that those project trainees were at a cautious health level . Therefore, they must work hard to improve this performance capacity immediately; if not, they go to hazardous health level and they may suffer an injury and long-term damage might already be underway: Whereas, post-test mean values for muscular strength are (9.71) indicated that they were at an enhanced health level. This shows they go in the right direction. Due to this, they should do some exercises to improve this performance capacity. But there was progressive improvement in muscular strength performance which was indicated by the mean difference between pre and post-test. The findings on muscular strength revealed that there was a significant mean difference between the tests. The mean difference in muscular strength was due to the

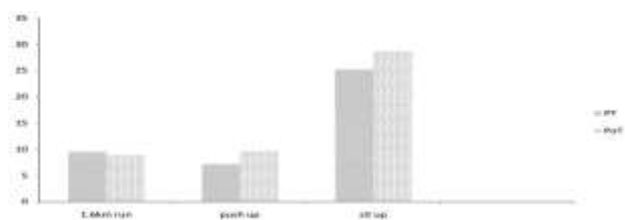
| Dependent variables | Pre-test | | Post-test | | | |
|---------------------|----------|------|-----------|------|---------|-------|
| | Mean | SD | Mean | SD | T-value | Sig |
| CAVE | 9.52 | 0.89 | 8.93 | 0.68 | 2.54 | 0.014 |
| MS | 7.17 | 2.42 | 9.71 | 2.38 | 3.65 | 0.001 |
| ME | 25.16 | 5.14 | 28.64 | 3.60 | 2.71 | 0.009 |

physical fitness training exercises in which they were engaged for 12 weeks. The finding of this study was in

agreement with the findings of Ga (1979) who conducted the study on comparing the effects of circuit strength training and jogging program. The look at found out that each package have been powerful in generating huge development in treadmill instances and V02max. However, circuit energy schooling produced huge upgrades in VO2max and resting coronary heart rate. Gebbttman additionally determined huge discounts in frame fats percentage, fats weight, the sum of six skinfolds, and waist girth due to circuit energy-schooling, in addition to huge will increase in lean frame weight, biceps girth, isotonic and isometric energy measures. (Hoeger,2002) has condemned the concept that energy is a fundamental aspect of health and health that is important for regular bodily sports and amusement for a happier life. Strength refers back to the most anxiety or pressure muscle mass expand in a single contraction against a given resistance. It is crucial for optimal performance in daily activities such as sitting, walking, running, lifting, carrying objects and doing household work, or even enjoying recreational activities. Alike, other variables muscular endurance also showed improvement in performance from pre-test to post-test. The pre-test means the value of muscular endurance was (25.16). Showed that those project trainees were at a cautious health level. Therefore, they must work hard to improve this performance capacity. However, post-test mean values there was a significant improvement in the performance of the participants. The mean values for post-tests were (28.64). This showed that their performance capacity of muscular endurance was enhanced due to the physical fitness training program. This mean difference among tests showed that there was progressive improvement in the performance of muscular endurance during 12 weeks training periods.

Table 4. Skill-related physical fitness pre-test and post-test in one place.

Note, $p < .05$, * = Significant and the data in the form of Mean \pm SD



Note that cv = cardio respiratory endurance, pu = push - ups, su = sit - ups
PT = pre-test POT = post test

Figure 1: Pre and post-Mean values of health-related physical fitness

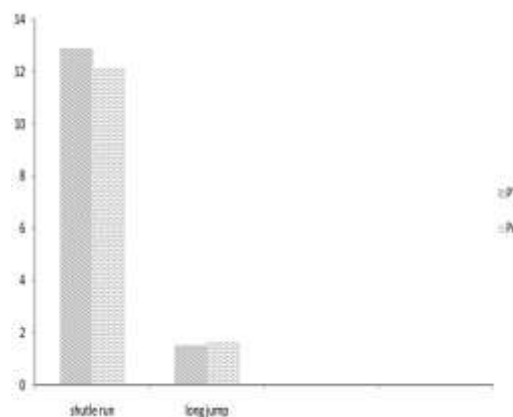
As already stated, This figure 1 depicts the mean difference between the pre-test and post-test on health-related physical fitness. The improvement can be seen. Figure 1 shows that the participants' cardiorespiratory endurance, muscular strength, and muscular endurance improved significantly after 3 months of physical fitness training, which enabled the subjects to perform better in the 1.6 km run, pushups, and sit-ups than before. As a result, persons who desire to improve their cardiorespiratory endurance, muscular strength, and muscular endurance should engage in physical fitness training. The findings of this study were in line with those of (Kaikkonen et al, 2000), who looked at the effects of 12 weeks of low resistance training on cardiorespiratory endurance and muscular fitness in ninety healthy sedentary adults and discovered that the training group improved cardiorespiratory endurance significantly. (Lin et al, 2006) looked at the impact of aerobic exercise on worksite health-related physical fitness and found that the training group improved abdominal muscle strength and endurance much more than the control group.

As indicated in table 4, there was a significant improvement in performance on agility and power of project trainee from pre to post-tests. In agility, the pre- to post-training test mean value for Conversion were (12.86). Showed that those project trainees were at a cautious health level at the beginning of the training program. Therefore, they must work to improve/enhance their performance capacity immediately; if not, they may go to hazardous health levels. And this shows the risk for their health level. Whereas, the post-test mean values were (12.14) which indicated that they were at an enhanced health level. These mean values indicated that they were heading in the right direction of health level. The findings on agility revealed that there was

| Dependent variables | Pre-test | | Post-test | | | |
|---------------------|----------|-------|-----------|------|---------|------|
| | Mean | SD | Mean | SD | T-value | Sig |
| Agility | 12.86 | 0.406 | 12.14 | 0.53 | 1.80 | 0.00 |
| Power | 1.54 | 0.12 | 1.65 | 0.09 | 3.39 | 0.01 |

a significant performance improvement. The improvement in agility performance level was due to the physical fitness training program in which they were engaged for twelve weeks. The lower time spent covering distance, the greater effects of training on speed, path change, and acceleration had been indicating development of agility. The above desk illustrates the development of agility due to the fact there

has been a decline in time for the duration of 12 weeks of schooling. The locating of this observes turned into in settlement with (Sharmila, 2013) who stated that seven weeks of modern schooling of bodily health application has big development on all of the bodily health additives withinside the case of boys. The exercise of a modern schooling application stepped forward the speed, explosive electricity, persistence electricity, and forearm muscle mass of ladies. There turned into no big distinction in agility and electricity of belly muscle, a aspect of bodily health in ladies. Alike agility there has been a big development withinside the electricity of participants. pre-take a look at implies values had been (1.54) this illustrated that pre-take a look at turned into at a careful fitness level. Therefore, they should do schooling to enhance their overall performance potential and fitness level. Whereas, the post-take a look at imply cost turned into (1.65). confirmed that they had been at an superior fitness level. As a end result, they need to do a little physical games to enhance their overall performance potential. But, the imply distinction among pre and post-exams indicated the modern development in overall performance on electricity all through 12 weeks duration of schooling. The reason in the back of their development withinside the overall performance of electricity turned into the bodily health schooling application held for 12 weeks. The status lengthy leap turned into used to degree the electricity of the subjects. The findings on electricity, as observed through the paired samples t-take a look at, confirmed statistical significance. The big imply distinction in electricity turned into because of the 12 weeks bodily health schooling physical games of the everyday schooling. The longer distance included all through status lengthy leap famous the extra outcomes of schooling on electricity. The above desk additionally illustrates that development of electricity imply increment withinside the distance they jumped. The effects of this observe had been in settlement with the end result of (Adeniji,2007) who performed a observe to have a look at the comparative outcomes of a circuit schooling application at the Speed and Power of Pre- and Post-Menarcheal ladies. Pre- to post-take a look at manipulate institution experimental layout turned into used to perform the observe. A general of 80 secondary faculty ladies from St. Peter's College, Olomore, Abeokuta, withinside the Ogun State of Nigeria, a while 10-17 years took component withinside the observe. The findings of indicated that the circuit training on speed and power was significantly better for the experimental group



Note, $p < .05$, * = Significant and the data in the form of Mean \pm SD
Figure 2. pre-test and post-test Mean values for skill-related physical fitness

As demonstrated in Figure 2, the mean difference in skill-related physical fitness from pre- to post-test was deferred from pre to post. The improvement in fitness performance can be seen in this difference. Figure 2 depicted the shuttle runs and standing long jump performances of the participants. The development of agility and power was noted due to physical fitness training that was carried out two days per week for three months, allowing the individuals to perform better from pre- to post-test. Therefore, physical fitness training was recommended for those who want to develop their agility and power. The result of this study is supported by the study of Shaikh and Mallick (2012) that conducted the study on the effects of ply metrics training among University male students and found that ply metric training was effective in improving explosive power, agility, and muscular endurance. The finding of this study is supported by the study of Manohar and Sarvesh, (2011) who carried out their study on selected physical fitness training exercises that contribute positively towards the improvement in the performance of cardiovascular endurance, vertical jumping ability, agility, muscular endurance and skill ability of football players as tested by shuttle run test, bent knee sit-ups test, 30m running with the ball test and kicking accuracy test. Associated physical fitness variables of football players were also improved significantly as a result of selected physical fitness training exercises

Table 5. The mean difference value and significance level of each test results

Note: PT= Pre-Test, Test, PoT=Post Test, MD- mean difference

Table 5 summarized the results of each test. The mean, the mean difference between tests, and the significance of post-tests in relation to the pre-test are all included. Cardiorespiratory endurance, muscular strength, muscular endurance, agility and power physical fitness variables all showed progressive substantial improvements in performance changes; that is, health-related and skill-related physical fitness in two days per week for 12 weeks. weeks improvement was shown. But their degree is varying from one variable to the other. When we compare the post result of cardiorespiratory endurance was 0.59, muscular strength was 2.54, muscular endurance was 3.48, agility was 0.72 and power was 0.11. From this result, we conclude that health-related show more improvement than skill-related physical fitness. Generally, the result of this study revealed that a fitness training program is useful to improve the performance of physical fitness variables among project trainee participants.

Discussion

This study was to investigate the effect of physical fitness training on the performance of youth volleyball project players: in the case of ana lemo worda, Hadiya zone. When we assess this training on all variables of health-related and skill-related fitness variables so many materials were limited. Such as a balanced diet and modern materials in that rural area shortage of human power, a lack of financial payment for assistance, and the like. The study should that all coaching staff are similar sex, majority of the coaching staff educational level found between diploma and degree, the age of the coaching staff are 31-45 coaching staff are founded in the adult age.

In terms of the coaching plan, every coach has a training plan that incorporates the four components of physical, technical, tactical, and psychological preparation. In terms of training session duration, each training session lasts 90 minutes, during which time the coach might devote 40 minutes to fitness training. Only one court should be used for the session training.

Regarding warm-up training player was always doing warm-up and cool down before and after training should take 10-15 minutes and then the cooldown program spend 5-10 minutes. Regarding the types of tests, the project coaching staff responded to all types of tests such as power test, speed, speed endurance, agility, strength endurance, and flexibility test be conducted 3 to 4 times per year.

The major findings that depend on the research questions for this investigation were the increment or the improvement of

| Dependent Variables | Test(J)Mean | Test (I) | Mean Value for(I) | MD P(J-I) Respectively | P |
|------------------------------------|---------------|----------|-------------------|------------------------|-------|
| Cardio-Respiratory Endurance(CRE) | PoT (J)9.52 | P T (I) | 8.93 | -0.59 | 0.014 |
| Muscular Strength (MS) | PoT (J) 9.71 | P T | 7.17 | 2.54 | 0.001 |
| Muscular Endurance (ME) | PoT (J) 28.64 | P T | 25.16 | 3.48 | 0.009 |
| Agility | PoT (J)12.14 | P T | 12.86 | -0.72 | 0.000 |
| Power | PoT (J) 1.65 | P T | 1.54 | 0.11 | 0.001 |

selected physical fitness variables such as cardiorespiratory endurance, muscular strength, muscular endurance, agility, and power. There are a lot of exercises that develop the physical fitness of participants. For this study 1.6 km run was used to measure cardiorespiratory endurance; several modified push-ups per 30 seconds was used to measure muscular strength; several sit-ups per 60 seconds was used to measure muscular endurance; 4x10 m shuttle run was used to measure agility while standing long jump was used to measure the power of pre-test and post-test. The analysis of data was done through an independent t-test to see the difference if any. The level of significance was set at 0.05. As the tests result indicated that there was progressive improvement in performance from pre-test to post-test due to a physical fitness training program in 12 weeks. The tests results showed that statistically, significance enhancement was observed in the participants' fitness level. physical fitness training provides strenuous work entirely suited to an individual's specific needs, existing capacity, and rate of adjustment to progressive vigorous exercises. This study's findings were consistent with those of Kaikkonen et al. (2000), who investigated the effects of 12 weeks of low resistance training on cardiorespiratory endurance and muscular fitness in ninety healthy sedentary adults and discovered that the training group significantly improved cardiorespiratory endurance. Lin et al. (2006)

looked examined the impact of aerobic exercise on worksite health-related physical fitness and found that the exercise group improved abdominal muscle strength and endurance much more than the control group.

During the pre-test phase, the project players' performance deteriorated or remained unchanged. The lack of physical fitness training, which lasted 12 weeks from March to May, was the reason for the deference. The findings of this study agreed with Sharmila (2013), who stated that in the case of boys, seven weeks of progressive physical fitness training results in considerable improvements in all physical fitness components. Girls' speed, explosive power, endurance strength, and forearm muscles improved as a result of a progressive training program. There were no significant differences in abdominal muscular agility or strength, which is a component of physical fitness in athletes.

Conclusion

This study found that there was progressive improvement in the selected physical fitness variables during training periods in post-test, while not in the pre-test. Regular participation in physical fitness training improves the physical fitness of the volleyball project trainee. Physical fitness training was found better in improving the cardiorespiratory fitness, muscular endurance, and muscular

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