Increasing Aerobic Durability Skill by Practicing Extensive Interval Method for Volleyball Athlete in Rokan Hulu Regency

Zulbahri¹*, M. Nurhisyam Ali Setiawan²

¹²Medical and Sport Program, Pasir Pangarayan University, Tuanku Tumbusai Street, Kumu Village Rambah Hilir District, Rokan Hulu Regency, Indonesia

zulbahriarrahman@ymail.com

*Corresponding Author
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Abstract: The observation on the research shows that aerobic durability from volleyball team of Rokan Hulu district is still low. The purpose of this research is to know how the interval extensive method influenced the aerobic durability skills. The sample of this research is 48 players of Rokan Hulu volleyball team and the sample technique is purposive sampling by the number of 16 players by running 2,400 meters. The result shows that the extensive interval method influenced the ability and the durability of the volleyball players of Rokan Hulu district because the hypothesis test result (6.69) bigger than 1.75 and become increasing skill and durability of the aerobic average from 743.19 second to 690.69 second.

Keywords: Interval Extensive Method, Aerobic Durability Skill.

1. Introduction

Aerobic durability is a complex component from a fit body because some physiologist interaction process in cardio vascular, respiratory and muscles system and include the capacity of lungs to gets oxygen and the capacity of blood in the lung to get the oxygen, the capacity of heart to puss the blood and the capacity of cell to get oxygen from blood to produce energy.

To get a fix physic and good aerobic durability it cannot get intentionally, but need hard practice and supported by correct practicing method from coach. In increasing good physic, there are many method are used mainly to increase aerobic durability skill such as circuit method, interval method, regular method, fartlek and others. Because all practicing method should be proper with the purpose aspect the involved are volume intensity, frequency and rest time.

Rokan Hulu is a district placed in Riau Province. Rokan Hulu Regency is one of the places where the society like playing volley ball very much. It shows in their spirit to develop this sport in their daily life even, the competition of volley ball in this Rokan Hulu regency in district level and also national level. Unfortunately, in fact Rokan Hulu cannot produce best athletes in volley ball. They are unable to be a winner in national level.

As a prove from the result of the observation in POPDA tournament that hold in Mei 2016 in Pekanbaru, volley ball team from Rokan Hulu was unable to become the winner. For female team, they failed in spouse round which was the first match opponent Siak regency with 3-0 score. For male, they reach semifinal but they failed in the end because defeated by volley ball from Rokan Hilir with 3-1 score. Based on the field observation, many of volley ball athletes from Rokan Hulu are easy to get exhausted in match; in fact they are in first and second round. Thus, the effects they cannot play well and cannot continue to the third round. Then, based on the coach statement of volley ball athletes in
Rokan Hulu said that it because the aerobic durability of volley ball athlete is still low or bad. Thus, they often exhaust when doing physic activity in practicing and also when they have match.

Based on direct observation from researcher in the field and also interview with volley ball coach in Rokan Hulu, they main factor of increasing aerobic durability skill is applying a proper method is also be a great attention to the ability of the athlete in practicing. Therefore, applying a proper method is hoped able to increase physic quality of aerobic durability mainly.

2. Literature Review

2.1. Playing Volley Ball

Volley ball was created in 1896 by William G. Morgan who is a leader of sport education in YMCA in Holy Yoke city, America. W.G. Morgan created an air game by hitting through net that scratch in the same measure of the field. The ball which is used at the time is the core side of basket ball and the net is tennis net. In the first time, this game is called Minonette. Then, Dr. Halseted Springfeld advice to change the name become volley ball that mean playing volley ball in turn [7].

According to Angraini (2014) explained that volley ball is a sport that played by two teams in a field that separated by a net. Volley ball is game that play by two groups or teams consist of six players. The players have a right to do service, upper passing, low passing, smash, and block. Basic techniques in volley ball are (1) Service, (2) Passing, (3) Feed, (4) Smash, (5) Block [1]. Volley ball is played in field with 18 meters length, 9 meters width and 2.43 meters height for male and 2.24 meters for female. This game involves almost all of motions like, jumping, hitting and other explosive motion.

2.2. Aerobic Durability

According to Nugroho (2010) said that “aerobic durability is basic physic component which cannot separate from increasing and protecting“ [8]. It means in increasing all components of physic must developed even doing by priority system based on condition and status needed. Related with it, according to Indriana (2014) “aerobic durability is a skill to work, practice in long term” [5]. Athlete who has good physic is an athlete that can practice in short term time and their condition is back like the first before practicing.

2.3. Extensive Interval Method

According to Harsono (2001) “Interval training is practicing system with intervals like rest time”. Interval principal is practice principal based on period changing. According to Syafrudin (2011) “extensive interval method known through mid burden intensity around 60 till 80 percent, a huge burden based on repetition and not full of break” [11].

3. Methodology

This research is descriptive. Method used in this research is quantitative. Quantitative research method is a research method that based on positive philosophy and used to observe in population or certain sample. Collecting data use research instrument, data analysis in quantitative/statistic form with the purpose is to test the hypothesis that is stated [9].

Instrument used in this research is aerobic test (Copper test) by doing running for 2,400 meters. This test is created by Cooper who is expert of sport education. The purpose is to measure physic condition somebody through aerobic durability measurement. Procedure of this running test 2,400 meters is done as following: 1. Before doing test, tested is given foreplay, 2. Running test 2,400 meters is doing by group based on the number selected, each group consist of 4 people. Running test is done based on the rule (Table 1), 3. Tools used are stopwatch, stationary such as paper and pen, an also test place which 2400 meters round taking time is done by an official.

Measurement is based on [11] as following:
1. Tested stain behind start line
2. Command “yes” stopwatch is on and the tested run for 6 rounds (2400 meters)
3. After finishing running for 2400 meters stopwatch is off
4. The time shown in stopwatch is the tested result data.
### Table 1. Rule of running test 2400 meters

<table>
<thead>
<tr>
<th>No</th>
<th>Result of running 2400 meters (Second)</th>
<th>category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>&gt; 15.31</td>
<td>Very Bad</td>
</tr>
<tr>
<td>2.</td>
<td>12.11 – 15.30</td>
<td>Bad</td>
</tr>
<tr>
<td>3.</td>
<td>10.49 -12.10</td>
<td>Average</td>
</tr>
<tr>
<td>4.</td>
<td>09.41 – 10.48</td>
<td>Good</td>
</tr>
<tr>
<td>5.</td>
<td>08.37 – 09.40</td>
<td>Very good</td>
</tr>
<tr>
<td>6.</td>
<td>&lt; 08.37</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Data collected from the result of first test and the last test is then analyzed by using normality static test and Test-T with the step as following:
1. Normality test by using Lilliefors
2. Homogenity test is not doing because practising group is already same
3. Test-T, based on [9] with the form:

\[
t = \frac{\overline{D}}{\sqrt{\frac{\sum D^2}{n(n-1)}}}
\]

Where:
- \( t \) = Price t for sample
- \( D \) = Difference in initial test scores and final test scores for each sample
- \( \overline{D} \) = The average of the initial test difference and the final test for each sample
- \( n \) = Number of samples.

### 4. Results and Discussion

There are several practices that can be used to get aerobic durability. According to Budiwanto (2012) one of them is interval practice, “practicing by using interval method is running practice done by interval or rest time. The intensity of practice with medium speed is speedy around 60% - 70% from maximum ability” [2]. From the above explanation it means that to get aerobic durability one of the practice method is using interval practice method.

### Table 2. Running test result 2.4 KM

<table>
<thead>
<tr>
<th></th>
<th>Pre Test (second)</th>
<th>Post Test (Second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>743.19</td>
<td>690.69</td>
</tr>
</tbody>
</table>

### Table 3. Hypothesis Test

<table>
<thead>
<tr>
<th>T count</th>
<th>T table</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.69</td>
<td>1.75</td>
</tr>
</tbody>
</table>

The result of research shows that extensive interval method can increase aerobic durability of volleyball athlete in Rokan Hulu regency significantly. Before giving the sample for the first time test is given. Based on that test result, aerobic durability with mean (average) for pre-test is 743.19 second or 12.43 minutes, but after giving extensive interval method the mean increases become 690.69 second or 11.30 minutes (see Table 2). It means that extensive interval method can increase aerobic durability volleyball athlete in Rokan Hulu significantly, that is also strength after doing test-T, where the result is 6.69 bigger than T table in \( \alpha = 0.05 \) (Table 3).

To get increased aerobic durability, one of practice form to be done is using extensive interval method. According to Lutan (2002) “Interval practice is one form from practice method that combine practice in short time and interval by rest time in every chance” [6]. Basically, interval has strong relation with recovery because both of them have same meaning, giving rest time while or repetition [10].

One of the interval practicing method form is extensive interval method. Extensive interval method is practicing method that based on medium intensity, much repetition and not full of rest. From the above argument said that much of repetition in practice, physiology will involved of body organ like heart, lung, and also artery toward burden is done.
Therefore, with rest time between round will make the students fresh and active again after doing practice. It is hoped that the effect of practice can increase aerobic durability. Suggestion to the player and also coach is to choose and use extensive interval method as a practice to increase aerobic durability.

5. Conclusion

Extensive interval method can increase aerobic durability of volleyball athlete in Rokan Hulu regency by average pre-test is 743.19 second or 12.43 minutes becomes 690.69 second or 11.30 minutes, then the T count (6.69) > T table (1.75).

References