Improved Vertical Jump After Jumping Rope Practice for Volleyball Extracurricular Players at SMA 1 Arosbaya

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ABSTRACT

This research is based on discussions with a senior Physical Education trainer (teacher) at SMAN 1 Arosbaya, Bangkalan Regency, one of the subjects the students like. I like volleyball sports materials. Teachers in the field of Physical Education, Health and Recreation at SMAN 1 Arosbaya apply that when teaching students, almost all students are happy and understand the material. The purpose of this study was to determine the effect of jumping rope training on the vertical jump of volleyball athletes in the extracurricular activities of SMAN 1 Arosbaya. Based on the frequency distribution in Table 2, the results of the pretest and post-test of Jumping Rope Exercises for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency, namely based on the output above, the mean value of the I/Pre Test test was 228.27 cm while for Test II/posttest it was 229.93. So it can be concluded that the average training acquisition has a different average. Based on the output that has been tested, the significance value is 0.000 > 0.05, there is a significant change in the results of the Jump Rope Exercise experiment on Volleyball Extracurricular Jump at SMA 1 Arosbaya, Bangkalan Regency.

Keywords: Vertical Jump; Jumping Rope; Volleyball.

INTRODUCTION

Exercise is one way to keep your physical fitness in good condition. So it looks like men and women, old or young doing sports (Yusmar, 2017). All this is done to maintain good health and physical fitness which is used as an important basis for a happy and useful life. Sports can also be used as a unifying tool (Sahabuddin, 2018). Given the important role of sports in human life (Permdani andi Gilang, 2018), the Indonesian government provides guidance and development in the field of sports. One of the sports that people like is volleyball (Karmida et al., 2017).

Sometimes a very dominant factor for certain sports, but on the other hand it is an obstacle in other sports as well. is needed especially in carrying out punches whose aim is to
kill the opponent's attack. So the power of the jump will be able to create the ability to hit hard (Nizar & Ali, 2018). One of the sports games carried out in the physical education process is volleyball. Volleyball is a sport that is familiar to the community and has many fans both in rural and urban areas (Jusran, 2019). In the game of volleyball there are various basic techniques known and to be able to play volleyball you have to master these basic techniques first (Suhairi, 2013). Mastery of the basic techniques of playing volleyball also determines the win or loss of a team in the game in addition to physical and mental conditions (Hambali & Rohedi, 2019). To realize the goals of physical education, one of the efforts that should be made is to develop movement abilities and skills in various kinds of games and sports. One of them is through the volleyball game branch (Anwar et al., 2022).

Volleyball is a popular sport in the world. According to Saputra (2019), The game of volleyball has now developed with certainty, both internationally and in Indonesia itself. In Indonesia, the sport of volleyball can be said to be very popular (Aji et al., 2020). This can be seen from the enthusiasm of the people who play volleyball a lot (Suriatno & Yusuf, 2018). Along with the introduction of the game of volleyball in various countries, at the same time, more and more people know and play the game (Sahabuddin, 2019). So many ideas were born starting from organizations that focus on developing the game of volleyball, the matches and the rules (Putra, 2018). The tally is 25 which is an effort to bring the volleyball game to a better development (Mujriah, 2017). Volleyball games need to be supported by basic techniques (Kurniawan & Ramadan, 2016). Volleyball itself requires players to master several techniques perfectly such as passing up and down, set up (bait), smash/spike, serve, and block techniques (Fallo & Hendri, 2016; Permdani andi Gilang, 2018).

A vertical jump is an upright jump that is done without using a prefix with the highest arm reach (Rifán, 2013). The vertical jump is quite widely used in sports, one of which is volleyball (Siswanto, 2012). vertical jump occurs in a plane of motion about an axis that penetrates a joint. For example, bending the elbow on the left hand when the right hand is moved up as high as possible (Zakaria et al., 2018). The vertical jump is very important when doing smashes and jumps to defend (dam) an opponent's smashes (Shahroni, 2019). The series of vertical jumps includes countermovement, propulsion, flight and landing (Pranopik, 2017). The height of the vertical jump is influenced by the strength of the leg muscles (Wahyudi & Indahwati, 2019). In addition, several components must be considered (Aulia & Hermanzoni, 2018), namely the work capacity of the cardiovascular, pulmonary, muscle performance, flexibility and several social and psychological aspects.
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Muscle performance itself consists of muscle strength (power), muscle endurance (endurance) and muscle macroscopic (Wismiarti & Hermanzoni, 2020). For vertical jumps to be carried out optimally, maximum muscle strength is needed to produce optimal muscle performance to minimize the risk of injury (Aguss et al., 2021).

Apart from having to master these basic techniques, a volleyball player must have the ability to jump up (vertical jump) which is very good because it will be useful and support when the player is blocking and smashing (Srianto, 2018). Volleyball game activities at the Bina Taruna club are always properly practised every week and always develop basic volleyball technical skills to the fullest, one of which is the smash technique. Smash is the main blow during the attack to achieve victory. A player who is good at smashing, or in a foreign term called a "smasher" must have agility, be good at jumping and have the ability to hit the ball as hard as possible (Hermanzoni, 2020).

Based on discussions with the trainer (teacher) of senior physical education and health at SMAN 1 AROSBAYA Bangkalan Regency, one of the subjects the students liked. I like volleyball sports materials. Teachers in the field of Physical Education and Recreation at SMAN 1 AROSBAYA apply that when teaching students, almost all of the students are happy and understand the material, but when the volleyball practice test is carried out, it is still not good.

METHOD

This study aims to determine how much the jump rope contributes to the vertical jump of volleyball players. The type of research used is quantitative with a descriptive approach to give an idea of whether or not there is and how much the jump rope contributes to the vertical jump of volleyball. This research design includes a quasi-experiment, with a sample, this design has a control group, but cannot fully function to control external variables that affect the implementation of the experiment (Sugiyono, 2015). The experimental method with an inseparable sample means that the researcher has only one group (sample), which is measured twice, the first measurement is carried out before the subject is given treatment (pretest), then treatment (treatment), which is finally closed with a second measurement (posttest). The design used in this study was "The One Group Pretest Posttest Design", so that the results of the treatment can be known more accurately because they can be compared with the conditions before being given treatment.

The definition of the population is a generalization area consisting of objects/
subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn (Eka Putra, 2021). The population has the least number of residents or individuals who have the same characteristics, in the implementation of this study the study population were students who took part in the volleyball extracurricular activity at SMA 1 Arosbaya as many as 15 students.

Data analysis is an activity after collecting data from all respondents or data sources (Sugiono, 2013). Data analysis is a series of activities for reviewing, classifying, systematizing, interpreting and verifying data so that a phenomenon has social, academic and scientific value. So the researchers used the formula that was used was the formula t-test or t-test. Because the t formula is used, there are many variations of the t formula and its use is adjusted to the characteristics of the data to be distinguished.

RESULTS AND DISCUSSION

Results

The results of the pretest and posttest of Jumping Rope Exercises for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency are presented in the following Table:

<table>
<thead>
<tr>
<th>Number</th>
<th>Sample</th>
<th>TEST I (cm)</th>
<th>TEST II (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>217</td>
<td>220</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>240</td>
<td>242</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>217</td>
<td>218</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>230</td>
<td>232</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>220</td>
<td>221</td>
</tr>
<tr>
<td>7</td>
<td>G</td>
<td>230</td>
<td>230</td>
</tr>
<tr>
<td>8</td>
<td>H</td>
<td>235</td>
<td>235</td>
</tr>
<tr>
<td>9</td>
<td>I</td>
<td>240</td>
<td>241</td>
</tr>
<tr>
<td>10</td>
<td>J</td>
<td>250</td>
<td>252</td>
</tr>
<tr>
<td>11</td>
<td>K</td>
<td>215</td>
<td>217</td>
</tr>
<tr>
<td>12</td>
<td>L</td>
<td>220</td>
<td>222</td>
</tr>
<tr>
<td>13</td>
<td>M</td>
<td>230</td>
<td>232</td>
</tr>
<tr>
<td>14</td>
<td>N</td>
<td>230</td>
<td>235</td>
</tr>
<tr>
<td>15</td>
<td>O</td>
<td>225</td>
<td>227</td>
</tr>
</tbody>
</table>

The results of the descriptive statistical analysis of the pretest and post-test of Jumping Rope Practice Against Volleyball Extracurricular Jump at SMA 1 Arosbaya, Bangkalan Regency are presented in the table below:
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### Table 2.
Descriptive Statistics of Jump Rope Exercise Against Vertical Jump

<table>
<thead>
<tr>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST_1</td>
<td>15</td>
<td>35</td>
<td>215</td>
<td>250</td>
<td>228.27</td>
<td>2.575</td>
</tr>
<tr>
<td>TEST_2</td>
<td>15</td>
<td>35</td>
<td>217</td>
<td>252</td>
<td>229.93</td>
<td>2.581</td>
</tr>
</tbody>
</table>

Based on the frequency distribution in Table 2 above, the results of the pretest and posttest of Jumping Rope Exercises for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency, namely based on the output above, the mean value of the I/Pre Test test is 228.27 cm while for Test II/posttest that is 229.93. So it can be concluded that the average training acquisition has a different average.

The t-test was used to test the hypothesis (Ho) which reads "There is no effect of Jumping Rope Practice on Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency" and hypothesis (Ha) which reads "There is an effect of Jumping Rope Practice on Volleyball Extracurricular Jump at SMA 1 Arosbaya, Bangkalan Regency", based on pretest and posttest results. If the results of the analysis show a significant difference, then the Jumping Rope Exercise for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency. The conclusion of the study is stated to be significant if the t-count > t-table and the sig value is less than 0.05 (Sig < 0.05). The results of the analysis obtained data in the Table below:

| Paired T-Test Test Results |
|---|---|---|---|
| Paired Differences | t | df | Sig.(2-tailed) |
| Mean | Std. Deviation | Std. Error | Mean 95% Confidence Interval of the Difference |
| Lower | Upper |
| TEST1 - TEST2 | -1.667 | 1.291 | .333 | -2.382 | -.952 | -5.000 | 14 | .000 |

Based on the above table Based on the output above, the significance value is 0.000 > 0.05, there is a significant change in the results of the Jump Rope Exercise experiment on Volleyball Extracurricular Jump at SMA 1 Arosbaya, Bangkalan Regency.

### Discussion

Based on the analysis of research data obtained a significant increase in the group studied. Significant influence on the increase in Jumping Rope Practice on Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency. This study aims
to train balance, strength, agility and explosive power, as well as measure the development of jumps in the Jump Rope exercise.

Become a good volleyball player, it requires coaching that includes physical, technical, tactical and mental. This is a major factor as well as being an integral part of planning and implementing a continuous training program, but the dominant factor is technique and also physical conditions in determining a person's ability to play volleyball. The ability to jump vertically also plays a role in a person's ability to smash in volleyball. We can see in the research table that students with an average jump height above 55 cm have good smash abilities. Of the 12 samples, only 2 samples had sufficient ability and 1 other was not good enough (Aguss et al., 2021).

The sequence of activities that must be carried out so that conclusions can be drawn is: (1) holding a pretest, (2) giving treatment in the form of a 5-week training program, (3) then the last is holding a posttest which aims to find out whether or not there is balance, strength. Based on the frequency distribution in Table 2 above, the results of the pretest and posttest of Jumping Rope Exercises for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency, namely based on the output above, the mean test value I / Pre Test is obtained. The rope is 228.27 cm while for Test II/posttest it is 229.93. So it can be concluded that the average training acquisition has a different average. The t-test was used to test the hypothesis (Ho) which reads "There is no effect of Jumping Rope Practice on Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency" and hypothesis (Ha) which reads "There is an effect of Jumping Rope Practice on Volleyball Extracurricular Jump at SMA 1 Arosbaya, Bangkalan Regency", based on pretest and posttest results. If the results of the analysis show a significant difference, then the Jumping Rope Exercise for Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency. The conclusion of the study is stated to be significant if the t count > t table and the sig value is less than 0.05 (Sig < 0.05). Evidenced by the Paired Sample T-Test showing its significance value. The results of the Paired T-Test show that there is a significant increase in the effect of Jumping Rope Training on the Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency.

CONCLUSIONS AND SUGGESTIONS

Based on the analysis of the results of the study, it can be concluded that the results of the Paired T-Test show that there is a significant increase in the influence of Jumping
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Rope Training on the Volleyball Extracurricular Vertical Jump at SMA 1 Arosbaya, Bangkalan Regency. A significance value of 0.000 > 0.05 was obtained from the results of the Jump Rope exercise against the Vertical Jump.

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