The Effect of a Training Program on Sandy and Solid Surfaces to Know the Development of Defensive Skills in Volleyball

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Abstract: The study aimed to prepare skillful physical exercises on the solid sandy surfaces of the research sample and also to identify the effect of physical and skill exercises on the sandy surfaces of volleyball players, in addition to learning about the effect of physical and skill exercises on solid surfaces of volleyball players, the researchers used the experimental method in the two experimental groups method (experimental design with a tight pre and post control) due to its relevance to the research nature and its goals and the training program applied to two different surfaces. (If the research was conducted on a sample consisting of (18) players represents the Kufa Club and the Abbasiya Club, the researchers distributed the two samples into two experimental groups, each of which consists of (9) players, where the two samples were equal in weight, height, age and athletic age, and the two samples were subjected to one training program, after completing the implementation of the program, data was collected and unloaded, in preparation for obtaining the results, the researchers reached a set of conclusions are: The first experimental group that trained on sandy surfaces better from the second experimental group which trained on solid surfaces in developing defensive skills in volleyball, where researchers recommend the need for training on sandy surfaces and their use in training because of the importance and effective positive impact on the skill, physical and psychological variables of players.

Keywords: Healthy, Training, Program, Defense Skills

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Introduction

Volleyball is one of the team sports that has taken a large part of modernity and innovation in its performance, and this is what we see when watching local and international matches, as the level of the game is in a continuous development in all its aspects as a result of the methods of physical and psychological preparation active and influential in the level of players as well as Skill preparation.

The volleyball game is one of the games which require many physical and motor capabilities due to the nature of its performance, which is characterized by different, changing and rapid situations which the player needs to have a high level of physical and motor capabilities and basic skills that enhance outstanding performance in games, where performance art in this game depends on the fitness of the volleyball player, the research importance is summarized in the benefit and assistance of the trainers from the results of the study in the use of training on sandy surfaces as a type of training to contribute to developing the physical and skill ability of players, as (Hassan, 1998) confirms that the amount of work input on sandy surfaces differs from the amount of work input on solid surfaces and that’s to the different degree of resistance faced by the player.

Methodology

The researchers used the experimental method with the two experimental groups method (Experimental design with a pre and post control) its relevance to the research nature and its objectives, "and experimentation is an intentional..."
and controlled change of the specific conditions of an accident and the observation of the resulting changes in the incident itself and its interpretation and the reasons that affected it” (Dhafer Hashem Al-Kazemi, 2012).

The research sample: The research sample was represented by the youth players of Al-Kufa Club and Al-Abbasiya Club in Al-Najaf Governorate, who were chosen in an intentional manner, and they were (23) players, as four players were excluded, so the sample became (19) players as the researchers distributed the two samples into two experimental groups, the first experimental training on sandy surfaces consists of (9) players and the second experimental group that trained on solid surfaces (9) players.

Means, tools and devices used in the research:

Means of data collection:
Arab and foreign scientific sources, observation, experimentation, testing and measurement.

2-3-2 Tools and used devices:
(6) of Volleyball, medical balls weighing (1 kg, 2 kg, 3 kg, 4 kg, 5 kg), non-stretchy colored tape, centimeter-indicated wall, chairs, colored signs, wooden terraces of different heights, Swedish seats, rubber ropes Iron bar with different weights.

Determination of skill tests:
1_ Accuracy of receiver from transmitter:

Purpose / Measuring the receiver accuracy from the transmitter

Tools / legal volleyball playground, matters for exercises placed on the top of the jump box with a height of 180 cm, the mattress is placed in place of the prepared player.

Performance specifications / the mattress is placed on a box in the position 3, the tested person stands at the position 6 , where another player stands in the designated place for transmission from the second half of the playground in order to transmit the player to receive the tested person, and to reach it to the matters, the tested person performs ten attempts from each center of the three background centers are the center (1, 6, 5).

Scoring / (4) points for each correct pass where the ball falls on the matters _ (two points) for each correct pass where the ball falls so that it touches the boundaries of the matters _ (one point) for each correct pass in which the ball falls within the boundaries of the 3m area. The maximum score for this test is (120), (Muhammad Subhi Hassanein and Hamdi Abdel-Moneim, 1997).

Test name: accuracy of the defensive skill of the playground:

The test purpose: accuracy of defensive skill of the playground from number 6

The used tools: divided volleyball playground - goal-setting tape - measuring tape - volley ball (10).
Performance specifications: The trainer prepares the hitting ball, directs the ball to the tested person, and then defends from center 6, directing the ball towards center 2.

Scoring conditions:
- 4 points for every attempt within Zone (A)
- 3 points for every attempt within Zone (B)
- 2 points for every attempt within Area (C)
- 1 point for every attempt within Region (D)
- (Zero) when the ball falls outside these areas.

When the ball falls on a common line between two regions, the score for the highest region is calculated.

The attempt of the tested person which commit a legal error is canceled, and the maximum score for this test is (40 degrees) (Hadi et al., 2007).

Purpose of the test
Measuring the player's ability to perform repeat performance at the same rate as the skill of the blocking wall from one location on the net.

Tools: legal volleyball playground, seat (terraces), legal volleyball, stopwatch, and net height legal (243 cm).

Performance specifications: The seat (terraces) is placed behind the net in the middle of it and at a distance of (50 cm), the trainer stands on the seat and holds the ball with both hands until it is above the level of the net by a distance (20 cm), (the tested person) stands within the area (3 m) in The second half of the playground until it is facing the net, and upon hearing the starting signal, the tested person progresses and jumps (jumping) to perform the blocking wall skill until it touches the ball that the coach holds with both hands from the top of the ball and then lands on the ground, repeating the performance for as many as possible for a period of (10s).

The conditions:
1. Every time the tested person jumps to perform the blocking wall, it is necessary to touch the ball with both hands from the top of the ball.
2. The tested person must repeat the performance until he hears the end time of the test
3. The coach must keep the ball above the net height for the duration of the test performance
4. Any performance violates the previous conditions in which the attempt is not counted to the number where the tested person performed during the specified time for the tests.

Scoring: The tested person records the number of valid attempts that it made during a period of (10s) (Nuri Ibrahim Al-Shouk, 1996).

Exploratory experience
"It is a practical training to find out the negatives and positives that the researchers met during the test procedure to avoid them in the future" (Nahida Abdel Zaid, 2002), so the exploratory experiment was conducted on the date of 01/21/2019 in the Horia Club playground on a sample consisting of (6) Players who were randomly chosen and outside the main research sample and were designed to:

Knowing the obstacles that researchers face when applying the tests.
Knowing the difficulties facing researchers and developing appropriate solutions for them.
Knowing the validity of the tests, devices and tools used, as well as knowing the time required to implement the training program

**Scientific foundations of tests:**

**The Test validity**

Validity means "the accuracy which the test measures the purpose for which this test was established" (Youssef Lazim Kamash, 2003) and in order to obtain the validity of the nominated tests.

**Test stability.**

Stability is defined as "if the test gives the same results if it is repeated on the same individuals in the same conditions" (Rahim Younis, 2008), and to find out the stability of the tests, the researchers used the test method and reapplied the test, as the researchers implement the tests on Sunday 28/1/2019 on a sample consisting of (6) players without the experimental research sample, and after seven days the tests were repeated as “the period between the two tests takes between (1-7) days (Ahmed Khater, Ali Fahmy, 1987) "After the simple correlation coefficient (Pearson) was extracted, it was found that all tests had a high stability.

**Pre-test**

Pre tests were conducted on (01/30/2019) on the two experimental groups in the closed hall of Al-Kufa Club at exactly 2 o'clock in the afternoon, as the transmitter reception accuracy test, the defensive of the playground test and the repeating block wall test, all sample’s members of (19) players has been attended, and through the efforts of the assistant team, the tests were completed at 7 pm.

The researchers applied the training program on 1/2/1/2019 until 5/30/2019 The first two sandy and solid second experimental groups were subject to the training program developed by the researchers themselves, as the experiment lasted (12) weeks with three training units for each group in one week, where it became (72) training units, where the training unit time was (120) minutes, and the main part was (80) minutes, where the first experimental group took the training dose for the training program on Saturday, Monday and Wednesday, while the second experimental group was taking Their training potions on Sunday, Tuesday and Thursday, at exactly two o'clock in the afternoon, as the researchers used the following rules to take out the training unit.

- The exercises should be at the level of the research sample.
- Using direct exercises related to working muscles and joint performance.
- The use of the principle of diversification in exercises, where some perform with tools and others without tools.
- Training was carried out by the method of repetitive training and the method of training low and high intensity with interfacial comfort.
- The researchers adopted in determining the rest periods between the exercises that would be sufficient to restore the player's normal functional condition (Raisan Khreibet, 1995).
- Use of ripple load (2-1) two high units and one low unit (stress gradient).

The intensity in the exercises used ranges from (65-100%) of the player’s maximum ability during the period of performing the physical exercises in a period of (12) weeks, and the principle of alternating muscle work and diversification of exercises was taken.

**Dimensional tests**
After completing the implementation of the training program, the post-tests of the two experimental groups were conducted on 1/5/2019, taking into account the provision of temporal and spatial conditions, the means used in the tribal tests and the same auxiliary team.

**Results**

Researchers used the SPSS statistical package to process data.

For the purpose of identifying the differences significance in the results of the pre- and post-skill tests for the research sample, the researchers used the t-test for the sample as shown in Table (1).

**Table (1) The arithmetic mean, standard deviations, and the (T) value of the first experimental research**

<table>
<thead>
<tr>
<th>S</th>
<th>The Skill tests</th>
<th>Pre-test</th>
<th>Post test</th>
<th>T- test value</th>
<th>Significance level</th>
<th>Significance type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>A+</td>
<td>A</td>
<td>A+</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Receiving accuracy from passing test</td>
<td>67·312</td>
<td>8·158</td>
<td>80·860</td>
<td>6·786</td>
<td>2·202</td>
</tr>
<tr>
<td>2</td>
<td>Defensive the playground test</td>
<td>28·790</td>
<td>3·936</td>
<td>34·588</td>
<td>3·488</td>
<td>3·201</td>
</tr>
<tr>
<td>3</td>
<td>Repeating block wall test</td>
<td>11·707</td>
<td>1·747</td>
<td>12·951</td>
<td>1·065</td>
<td>2·68</td>
</tr>
</tbody>
</table>

Under freedom degree (9_1) and significance level (0.05)

From the above table, it indicates us the arithmetic mean value and the standard deviation in the pre-test for the receiving accuracy of the passing are (67,312), (8,158), and for the post test is (80,860), (6,786) the value of (t) (2.202) and with a degree of freedom (8) below the significance level (0.05), which indicates the existence of significant differences in favor of the post test. As for the results of the defensive test accuracy of the playground in the pre-test, the arithmetic mean value and the standard deviation are (28,790), (3,936), for the post-test is (34,588), (3,488), the (t) value (3.201) and with freedom degree (8) and under significance level (0.05), which indicates the existence of significant differences in favor of the post test.

As for the results of repeating the block wall test in the pre-test, the arithmetic mean value and the standard deviation are (11,707), (1,747), and for the post-test is (12,951) and (1,065), the (t) value is (2.68) with freedom degree (8) under the significance level (0.05), which indicates the presence of significant differences in favor of the post-test of the sample that was trained on sandy surface.

**Table (2) The arithmetic mean, standard deviations and (T) value**

<table>
<thead>
<tr>
<th>S</th>
<th>The Skill tests</th>
<th>Pre-test</th>
<th>Post test</th>
<th>T- test value</th>
<th>Significance level</th>
<th>Significance type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>A</td>
<td>A+</td>
<td>A</td>
<td>A+</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Receiving accuracy from passing test</td>
<td>66·518</td>
<td>7·160</td>
<td>76·670</td>
<td>6·680</td>
<td>2·202</td>
</tr>
<tr>
<td>2</td>
<td>Defense of the playground test</td>
<td>25·482</td>
<td>25·482</td>
<td>4·576</td>
<td>29·938</td>
<td>3·990</td>
</tr>
<tr>
<td>3</td>
<td>Repeating block wall test</td>
<td>9·110</td>
<td>1·630</td>
<td>10·980</td>
<td>1·150</td>
<td>1·86</td>
</tr>
</tbody>
</table>

Under freedom degree (9_1) and significance level (0.05)

From the above table, it indicates us the arithmetic mean value and the standard deviation in the pre-test for the receiving accuracy of the passing are (66,518), (7,160) and for the post test is (76,670), (6,680) and the (t) value (2.202) with freedom degree (8) below the significance level (0.05), which indicates the existence of significant differences in favor of the post test. As for the results of the accuracy of the defense test for the playground in the pre-test, the arithmetic mean value and the standard deviation are (25,482), (4,576), and for the post-test is (29,938),
(3,990), the (t) value was (3.201) with freedom degree (8) and below the significance level (0.05), which indicates the existence of significant differences in favor of the post test.

As for the results of the repeating the block wall test in the pre-test, the arithmetic mean value and the standard deviation are (9,110), (1,630), and for the post-test is (9,980) and (1,150), the value of (t) is (1, 86) With a degree of freedom (8) and below the significance level (0.05), which indicates the existence of significant differences in favor of the post-test of the sample that was trained on solid surfaces.

Through the results of table (1_2), it was found that there were significant differences in the post test between the sandy and solid experimental groups and in favor of the sandy group, and this is what achieves the validity of the first hypothesis of the research.

The researchers attribute the progress in the performance of skills to the effectiveness of using the training program on sandy surfaces that have an impact on the player's training, and coaches may use sandy surfaces to develop fitness elements as a different inactive that may achieve positive aspects to preparing the players (Abdul Aziz, 2006), Sandy surfaces are also characterized by their low solidness, and it is considered one of the environmental factors that make it difficult for the player's skill, physical, planning, and physiological functions, as the different solidness of the earth effectson the reaction and relapseof volleyball players, and the friction coefficient for rough surfaces is higher than friction for smooth surfaces (kathreen& Wells ) 1971) Accordingly, the training idea on sandy surfaces came as one of the resistance exercises.

**Conclusion**

1-Training on sandy surfaces is better than training on solid surfaces for volleyball players.

2_ Physical training can be used on the sandy surfaces during the special preparation stage to develop the fitness and skill elements of volleyball players.

3_ Using sandy surfaces as a method of training affecting the physical and skill side of volleyball players.

4_ Conducting research to compare physical training on sandy surfaces and training on other surfaces like water and grass.

**Sources**


20. Nuri Ibrahim Al-Shouk: Some basic determinants of volleyball youth in Iraq, ages (16-14) years, (PhD thesis, College of Physical Education, University of Baghdad, 1996), p. 120.