The Relationship between Nutritional Status and Reaction Speed to the Service Skill of Students in Sepak Takraw at High School

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Abstract

This study aims to determine whether there is a relationship between nutritional status and speed of reaction to the skill to serve in sepak takraw. The problem in this study was the technique of serving in sepak takraw is good, but there are some students who can not do it well, and the ball goes in or over the net and vice versa. The purpose of this study was to determine whether there is a relationship between nutritional status and reaction speed on the skill to serve in sepak takraw. This research is quantitative descriptive research with correlation research methods, and there are three variables studied, namely nutritional status, reaction speed, and service skill. This research was conducted by calculating the bivariate correlation and linear regression. The results of research on the relationship between nutritional status and speed of reaction to service skill. The results of the study: (1) there is no significant relationship with the low correlation coefficient $r_{count} 0.394 < r_{table} 0.514$ with a contribution of 15.5%. (2) there is no significant relationship with a very low correlation coefficient $r_{count} 0.116 < r_{table} 0.514$ with a contribution of 1.3%. (3) There is a moderate relationship between the correlation coefficient $r_{count} (0.414)$ and $r_{table} (0.514)$ with a contribution of 17.7%

Keywords: Nutritional Status, Reaction Speed, Service Skill

INTRODUCTION

Physical education is an integral part of the education in Indonesia. Physical education, in general, affects students' cognitive, affective, and psychomotor potential. Improving physical fitness and sports achievement in the high school environment is an important part of education, especially physical education. Sport is an effort to improve physical and spiritual fitness. Sports activities are inseparable from activities requiring physical conditions, mental conditions, nutritional status, and food. Food is one of the supporting factors when doing sports because the food sources eaten will affect the body's function and health.

Simanjuntak (2020, p.7) states, "Nutritional status is a description of the balance between the need for nutrients for maintenance of life, maintenance of normal body functions and energy products..."
on the one hand and nutritional intake on the other hand." Rozi (2020) revealed that nutrition is related to students' fitness and health conditions because it supplies energy for the body. Based on this opinion, nutrition is related to food and the human body. Thus nutritional needs are related to the processes needed by the body to produce energy when exercising. Nutrients such as carbohydrates, fats, and proteins serve as burners that produce energy for sports activities, especially sepak takraw, which has speed and agility when playing games.

Ichsan (2004, p.18) "Speed is a person's skill to carry out continuous movements in the same form in the shortest possible time." Speed is categorized into 3, namely: (1) sprint speed, (2) reaction speed, and (3) movement speed. Sepak takraw is one of the branches that require accuracy, agility, and reaction speed in the game of sepak takraw. Ichsan (2004) revealed that reaction speed is a person's skill to respond to stimuli and stimuli that are given as quickly as possible. Based on this theory and opinion, reaction speed is the speed in answering and responding to stimuli or stimuli in the form of balls, opponents, and surrounding conditions in a short time.

To play sepak takraw, students must also be given good techniques to support and make it easier to do sports according to the nature of the game. Hanif Sofyan (2015), the basic techniques of sepak takraw include kick (service), cross kick, shoulder to shoulder, heading, smash, and blocking. Service for one of the techniques in the game of sepak takraw, carried out by the tekong towards the opponent's field as a sign and way of starting the game. Sulaiman (2008, p.22) "A good technique for serving sepak takraw is placing the ball and finding the weakest point to get points from the service".

**METHOD**

The results of this study are expected to be useful. They can be useful for science as an effort to improve physical conditions and develop the knowledge obtained from lectures. This research is expected to be useful and useful for the knowledge and experience of the researchers themselves and can be used as a benchmark and reference for further research.

This research method is a survey method with correlation techniques. The data collection technique used an instrument to test each variable studied to collect the data obtained. Then the data were processed using SPSS 22 by measuring the results of measurements that occurred at X1, X2, and Y. The total population was 15 people who took part in the sepak takraw extracurricular activity, and the sample was all 15 students who took part in the sepak takraw extracurricular.

The research design is as follows:

![Research Design Diagram](image)

*Fig. 1 Research design* (Arikunto, 2014)

Information:
X1: Nutritional Status
X2: Reaction Speed
Y: Top serving skill

Data collection techniques using test instruments. There are test instruments as follows:
1. Measuring nutritional status
   a. Height measurement (TB) Tools: Stadiometer/meter in cm
      Purpose: aims to measure height, 1 x measurement
b. Body weight (BB) Tools: Weight scale unit (Kg)
   Purpose: to calculate body weight, 1 x measurement
2. Reaction speed
   Tools: Foot Reaction Test, test blanks and stationery, ruler.
   Purpose: to measure the reaction speed of the foot in response to a stimulus, Experiments were carried out 3x, and the best value was taken
3. Skill to serve in sepak takraw
   Tools: takraw balls, nets, measurement blanks, and supporting facilities such as fields.
   Purpose: aims to determine the results of the service for sepak takraw. Done in 3 sets (1 set of ten times serves), then add up and take the best value.

RESULTS AND DISCUSSIONS

Result
The results of this study describe the results of the research conducted and processed using SPSS data. The results of this study were processed with a series of tests which became a data collection tool. The following summarizes the data analysis for each variable in the research results. The correlation test aims to find out whether there is a correlation (relationship) between the variables that have been examined. Tests on SPSS data using bivariate correlation at a significance level of 0.05.

a. Correlation test results of nutritional status (X1) on the skill to serve in sepak takraw (Y)

<table>
<thead>
<tr>
<th>Component</th>
<th>( r_{\text{count}} )</th>
<th>( r_{\text{table}} )</th>
<th>Decision Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional status (X1) on the skill to serve in Sepak takraw (Y)</td>
<td>0.394</td>
<td>0.514</td>
<td>( r_{\text{count}} &lt; r_{\text{table}} ), then Ho is accepted</td>
</tr>
</tbody>
</table>

Based on Table 1 shows the correlation coefficient between nutritional status and the skill to serve in sepak takraw is 0.394. From the results of the calculations above, it can be concluded that the \( r_{\text{count}} \) value is 0.394 < \( r_{\text{table}} \) 0.514, so Ho is accepted, and Ha (researcher's hypothesis) is rejected with the degree of relationship between nutritional status and service skill being in the low range (0.20-0.399), which means that nutritional status does not have a significant relationship to service skill.

b. Reaction speed correlation test results (X2) on the skill to serve in sepak takraw (Y)

<table>
<thead>
<tr>
<th>Component</th>
<th>( r_{\text{count}} )</th>
<th>( r_{\text{table}} )</th>
<th>Decision Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction speed (X2) to the skill to serve in sepak takraw (Y)</td>
<td>0.116</td>
<td>0.514</td>
<td>( r_{\text{count}} &lt; r_{\text{table}} ), then Ho is accepted</td>
</tr>
</tbody>
</table>

Based on Table 2 shows that the correlation coefficient between the speed of reaction and the skill to serve in sepak takraw is 0.116. From the calculation results above, it can be concluded that the \( r_{\text{count}} \) value is 0.116 < \( r_{\text{table}} \) 0.514, so Ho is accepted, and Ha (researcher's hypothesis) is rejected with the degree of relationship between the speed of reaction and the skill to serve
above is in the range (0.00-0.199) very low, which means that nutritional status is not has a significant relationship to service skills.

c. Correlation test results of nutritional status (X1) and reaction speed (X2) on the skill to serve in sepak takraw (Y)

<table>
<thead>
<tr>
<th>Component</th>
<th>r_{count}</th>
<th>r_{table}</th>
<th>Decision Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional status (X1), reaction speed (X2) to the skill to serve in sepak takraw (Y)</td>
<td>0.414</td>
<td>0.514</td>
<td>r_{count} &lt; r_{table}, then Ho is accepted</td>
</tr>
</tbody>
</table>

Based on Table 3 shows that the correlation coefficient between nutritional status and reaction speed on the skill to serve in sepak takraw is 0.414. The results of the calculations above can be concluded that the r_{count} value is 0.414 < r_{table} 0.514, then Ho is accepted, and Ha (researcher's hypothesis) is rejected with the degree of relationship between nutritional status and reaction speed to the skill to serve above is in the medium range (0.40-0.599), which means that nutritional status nutrition and speed of reaction do not have a relationship that is not too significant to the skill to serve simultaneously.

**Discussion**

The results of testing the hypothesis, calculations, and testing that there is no relationship between nutritional status and the skill to serve sepak takraw with a r_{count} value of 0.394 < r_{table} 0.514, then Ho is accepted, and Ha (researcher's hypothesis) is rejected with the degree of relationship between nutritional status and upper serving skill being in the range (0.20-0.399) is low, which means that nutritional status has no significant relationship to service skill. The regression test results show that the contribution of nutritional status to the skill to serve is 15.5%, and other variables influence the remaining 84.5%.

There is no correlation between reaction speed with the skill to serve for sepak takraw with a r_{count} value of 0.116 < r_{table} 0.514, so Ho is accepted, and Ha (researcher's hypothesis) is rejected with the degree of relationship between speed of reaction to the skill to serve above is in the range (0.00-0.199) very low, which means that nutritional status has no significant relationship to service skill. Wiyaka (2020,p.63) Reaction speed also plays an important role in doing sepak takraw. In the sepak takraw, reaction speed is related to the speed of welcoming the ball that comes as a stimulus and hitting the ball with the foot (smash and serve). The game of sepak takraw requires good timing to kick the ball and receive the ball from a smashing kick or a bouncing ball from a teammate when they are about to serve or kick-off. The results of the regression test between reaction speed and upper serve skill were 1.3%, and the remaining 98.6% was influenced by other variables such as leg muscle explosive power, leg length, flexibility, and hip joint flexibility, which also had a role in the game of sepak takraw.

There is no relationship between nutritional status and speed of reaction to the skill to serve in sepak takraw. We performed multiple correlation tests X1 and X2 to Y simultaneously. The degree of relationship between nutritional status and speed of reaction to the skill to serve is in the moderate range (0.40-0.599), which means that nutritional status and speed of reaction do not have a relationship that is not too significant to the skill to serve simultaneously.

**CONCLUSION AND SUGGESTION**

**Conclusion**

Based on the research analysis, it can be interpreted from the problems in this study, along with the conclusions in this study;
There is no relationship between nutritional status and the skill to serve in sepak takraw. According to the value of $r_{count} 0.394 < r_{table} 0.514$, $H_0$ is accepted, and $H_a$ is rejected with the value of the degree of relationship between nutritional status, and upper serving skill is directly low (0.20-0.399). The regression analysis results test the contribution of nutritional status to upper serving skill is 15.5%, and other variables influence the remaining 84.5%. Then there is no significant relationship between reaction speed and top serve skill. The value of $r_{count} 0.116 < r_{table} 0.514$, then $H_0$ is accepted, and $H_a$ is rejected with the value of the degree of relationship between reaction speed and service skill is directly (0.00-0.199) very low, in the regression test results, the contribution is 1.3% and the rest 98.6% influenced by other variables.

There is no positive and significant relationship between nutritional status and speed of reaction to the skill to serve simultaneously. The value of $r_{count} 0.414 < r_{table} 0.514$, then $H_0$ is accepted, and $H_a$ is rejected with the value of the degree of relationship between nutritional status and the speed of reaction to the skill to serve above being directly (0.40-0.599) moderate. The contribution value is 17.1% and the remaining 82.9% influenced by other variables.

Suggestion

Based on the analysis results and research conclusions, it is necessary to submit suggestions, while these suggestions are:

Improving the skill to serve in sepak takraw can be improved by increasing the practice frequency. To improve the service skill of SMAN 9 Pontianak extracurricular students, it is necessary to do research outside of this research because there are still influences and contributions from other variables that can affect the skill to serve in sepak takraw.

REFERENCES