The 1st Indonesian National Seminar on Physical Education and Sports Science (YISHPSS 2018)

October 26-27, 2018

Program Book

Universitas Negeri Yogyakarta
Preface

First of all allow us to extend our warmest greetings and welcome to you all to the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sports Science (YISHPESS 2018). The conference is held in conjunction with The 1st Conference on Interdisciplinary Approach in Sports (CoIS) by Faculty of Sport Sciences Universitas Negeri Yogyakarta in Yogyakarta, Indonesia on October 26-27, 2018.

The community building and development require integrated aspects in physical education and sports. These issues should be solved by researchers, lecturers, students and even practitioners to share and present their current research. The purposes of the conference are to share and present the reflection and research results related to Physical Education, Health, and Sports Science. In another issue, interdisciplinary approach has been defined as cross disciplines with an in-depth knowledge in one aspect working together to solve problems. Interdisciplinary approach in sports is very important to gain optional result of performance. In line with the first goal of this conference, it seeks better understanding both in theoretical and practical situation in every expert’s aspects.

With the YISHPESS’s conference theme: “Community Building and Development through Physical Education and Sports” and CoIS’s theme: “Integrating Sports Science Intervention to Optimize Human Performance”, approximately 236 papers have been submitted at this conference but only 158 of these have been accepted for the presentation after a blind peer review process. We do hope that this conferences proceeding can enrich our understanding of the role of physical education, sports, and health in maintaining community building and development as well as become a meeting point for academics, sport practitioners and sports professional to share ideas and knowledge for improving performance in sports.

We would like to thank to all parties who helped running this program. Hopefully, all the time and efforts we have spent for these two conferences may be beneficial and impactful for the future.

Yogyakarta, October 20, 2018

Organizing Committee
Committee Report

Dear Excellences, Rector of Universitas Negeri Yogyakarta, invited speakers, distinguished guests, and ladies and gentlemen.

It is our pleasure to welcome you to the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sports Science (YISHPESS 2018) and the 1st Conference on Interdisciplinary Approach in Sports (CoIS) held by Faculty of Sport Sciences, Universitas Negeri Yogyakarta. We would like to welcome all invited speakers from overseas who come from different countries to share their knowledge and ideas at this international conference.

We organize two conferences with the theme: “Community Building and Development through Physical Education and Sports” and “Integrating Sports Science Intervention to Optimize Human Performance”. These events reflect the role of sport science and physical education for developing human performance at this century.

Active participation from 11 invited speakers and 158 presenters reflect the important role of lecturers, students, researchers, and related background in sport and physical education. They will be organized into several panel and parallel sessions to facilitate main presentations and discussions. Moreover, all selected papers will be published in the international indexed proceeding.

We wish you enjoy these conferences and have a memorable time at Universitas Negeri Yogyakarta. Have a great day in Yogyakarta!

Organizing Committee
Keywords: exercise, cardiovascular endurance

The study of students from the Cardiovascular Study Program at the Universitas Negeri Jakarta investigated the influence of exercise on running performance. The study was conducted on a track based on improving cardiovascular endurance. The null hypothesis (H0) was that there is no difference in running performance between groups that did and did not perform exercise. The research was conducted on a track with a total length of 100 people. The purpose of this study was to determine whether the results of the cardiovascular performance of the students of the Universitas Negeri Jakarta are different from students from other universities.

Abstract

The aim of this study is to determine the impact of running on cardiovascular endurance.

Kuswandy, Rachman Pelson

Jakarta Students
Increase Cardiovascular Endurance of Universitas Negeri Jakarta
A Comparison Study of Running on Sand and Tarmac Track to

A Comparison Study of Running on Sand and Running on Tartan Track to Increase Cardiovascular Endurance. (Study on Students of Universitas Negeri Jakarta)

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Abstract—This study aims to determine how much the ratio between the impact of exercise run on the sand with a run on the tartan track to increase cardiovascular endurance in students of Sport Science Programme at the Universitas Negeri Jakarta. The research was conducted at the Gelanggang Olahraga Kampusman and the volleyball sand field of the Universitas Negeri Jakarta from January 08 to February 12, 2018. The method used was the experimental method with “Two Group Pre-test and Post-test Design”. Sample amounted to 20 people from the selection of 100 people with purpose sampling technique. Data analysis technique used is t-test. Based on the results of the data analysis then H1 rejected and H1 accepted, so it can be concluded that there is a significant difference between the exercise run on the sand and exercise run on tartan track where the exercise run on sand more influential than exercise run on tartan track to enhancing cardiovascular endurance. The final conclusion obtained in this study is that exercise run on sand has a greater effect on the enhancement of cardiovascular endurance compared to the exercise run on tartan track in student of ilmu Kedokteran Study Programme at the Universitas Negeri Jakarta.

Keywords—Exercise run on sand. Exercise run on tartan track. Cardiovascular endurance

I. INTRODUCTION

Current’s development and technological advances make everything easier, and it affects people’s lifestyles, especially students. Many students have below average physical fitness levels nowadays. This happened because the lack of physical activity or exercise in their daily basis.

Sports students are active both in the field of theory and practice, in their daily life they must follow theoretical lectures and practice many kind of sports. Therefore, they are required to have a good level of physical fitness, one of which is the component of heart and lung endurance.

A person who has a good physical fitness will be able to cope with any workload without causing significant fatigue, even having spare power for emergency use at any time. Therefore, we could get a good physical fitness by doing regular exercise.

Thus, running is one of the chosen ways to increase the level of physical fitness of students. Many people choose running as their exercise. Because it is cheap and easy, and it can be done anywhere and anytime. However, most people tend to prefer sports games.

With an excuse to prefer play sports game because they think sports game is more interesting, it’s a lot more fun, they don’t get bored easily; so they will sweat more, such as volleyball, basketball, futsal, and soccer. Yet when viewed in terms of benefits for the body, running is very effective in improving physical fitness, it can increase heart and lung resistance cardiovascular. Cardiovascular endurance is the ability of the heart and lungs and body vessels to function optimally while performing daily activities in a long time without experiencing significant fatigue. Nowadays, there are many running tracks available for public such as those found in sports arenas and parks created by the government. This can be used to train and improve the level of people’s physical fitness, especially students. But there are other alternatives that are considered very effective to increase the level of physical fitness, namely by running on the sand field. This is of course still needs to be investigated further.

Therefore, in this study will be discussed about the benefits of running on tartan track and running on the sand field to increase cardiovascular endurance. So hopefully from the results obtained in this study later can be beneficial for the sport knowledges, especially for trainers coaches in choosing effective training methods to improve cardiovascular endurance. So it can provide benefits to increase the athlete’s performances.

II. RESULTS AND DISCUSSION

A. Physical Fitness

First, man in his life can not be separated from physical activity, it takes good practice to maintain or improve the quality of physical fitness. With regular exercise we can maintain even improve our physical fitness. Some people do the exercises in different forms according to the needs of each individual. Some want to make the body ideal, healing from disease, therapy or maintaining physical fitness.

Bompa in his book “Theory and Methodology of Training” explains that exercise is a systematic activity over a long period of time, progressively enhanced and affecting individuals on the characteristics of physiological functions to achieve a defined goal. Based on the above theory exercise is a concept of a person in carrying out an activity through a long time, systematic and progressive, so that the purpose of the exercise can affect and taken the benefits of the specific and overall. Therefore, it is clear that regular and repetitive exercise can improve physical fitness. However, these
each with a width of 1.22 m and a maximum of 1.25 m. On the inside should be given a limit with cement or other materials with a minimum height of 5 cm and a minimum width of 5 cm. For a circular field in an oval shape, with the start and finish points already determined by length. The first meter measurement is taken from a point 30 cm out from the inner line in the track, if the path without cement border then it is taken 20 cm from the inner line in the track.

Sand can also be a tool of sports and burn calories quickly. According to a new study published in the Journal of Strength Conditioning and Resistance, sand can burn more calories. Western Australian Institute of Sport researchers found that our heart beats about 1.1 times faster when doing activity in the sand. Due to uneven sand surfaces, our bodies will work harder to perform a movement than in a solid, flat land. In addition, running in the sand will also stimulate all the muscles and skeletal body. To pull the legs embedded in the sand, the body needs to move all the muscles of the body to the maximum in order to keep moving and running. Surely, this will release more energy. Sand is an example of granular material. Sand grains are generally sized between 0.0025 to 2 millimeters. The sand-forming material is silicon dioxide, but in some tropical and subtropical beaches it is generally formed from limestone. Sand can also be a tool of sports such as jogging and running. Doing a jog on the sand is very good because the texture of sand is solid and uneven make us spend more energy at the time of doing. [7]

Running is a physical activity that everyone must have done. Due to the simplicity of this sport, running becomes an option to meet the needs of people's physical activity. Because running can improve endurance ability. Running in the sand can complicate or aggravate us because of the uneven sand surfaces, the body will work harder to make a movement and will stimulate all the muscles and skeletons to expand more power. Compared to running on tartan tracks that do not need excessive power because the track surface is solid and flat it makes it easy to run. Muscles that work when running on the track, work lighter than running on the sand. Maximum aerobic speed is used before the program aims to determine specific distance and speed of running during exercise. Because each individual has different endurance capabilities. After calculating maximum aerobic speed then given the Tabata exercise program. Therefore, researchers conducted a study on comparisons to improve cardiovascular endurance. The research studied the comparison between running on the sand with running on the tartan track to increase the cardiovascular endurance is more effective, whether running on the sand or runs on a tartan track. [9]

III. THE DATA RESULT

Data collection used as research data obtained from the pre test and the post test of cardiovascular endurance based on observations from the results of the comparison of running on the sand and on the tartan track. The data for the group running on the sand can be described as follows: [8]

a. Preliminary test data bloop group test run in sand (X1) result Has the highest Vo2 Max 51.1 and Vo2 Max lowest 36.8, with average (X1) = 43.71, standard deviation (SX1) = 4.10 and standard error mean (SEmax1) = 1.36.

b. Final test data bloop group test run in sand (X2) result Has the highest Vo2 Max 56.5 and Vo2 Max 45.5, with average (X2) = 50.96, standard deviation (SX2) = 36.5 and standard error mean (SEmax2) = 2.12.

Data collection used as research data obtained from the pre test and the post test of cardiovascular endurance based on observations from the results of the comparison of running on the sand and on the tartan track. The data for the group running on the tartan track can be described as follows:

a. Initial test data bloop group test run on Track Tartan (Y1) result Has the highest Vo2 Max 51.1 and Vo2 Max lowest 36.8, with average (Y1) = 43.44, standard deviation (SY1) = 4.80 and standard error mean (SEmaxY1) = 1.46.

b. Final test data bloop group test run on Track Tartan (Y2) result Has Vo2 Max 52.8 and Vo2 Max lowest 39.9, with average (Y2) = 45.43, standard deviation (SY2) = 4.11 and standard error mean (SEmaxY2) = 1.37.

The results of the pre test and post test of cardiovascular endurance in the sand group with average value (MD) 7.25, standard deviation (SD) 3.98, and the standard error mean (SEMD) = 1.32, the value becomes t-count is obtained 5.492. Then the result is tested with t-table at degrees of freedom (df) = n - 1 = 10 - 1 = 9 with the level of test (a) 0.05 obtained the critical value t-table = 2.262. Thus the value of t-count is greater than t-table (t-count = 5.492 > t-table = 2.262).

Based on the data analysis can be concluded the null hypothesis (H0) is rejected, the working hypothesis (H1) is accepted, meaning the running on the sand has the effect of changes in cardiovascular endurance.

The results of the pre test and post test of cardiovascular endurance in the Tartan Track with average score (MD) 1.99, standard deviation (SD) 1.22, and the mean error standard (SEMD) = 0.44, the value being t-count obtained 4.975. Then the result is tested with t-table on degrees of freedom (df) = n - 1 = 10 - 1 = 9 with the level of test (a) 0.05 obtained the critical value t-table = 2.262. Thus the value of t-count is greater than t-table (t-count = 4.975 > t-table = 2.262).

Based on the data analysis can be concluded the null hypothesis (H0) is rejected, working hypothesis (H1) is accepted, means that running on the tartan track has an effect on the cardiovascular endurance changes.

From the data of cardiovascular post test run in the sand and on the tartan track group obtained the standard difference between two mean (SEmax = 1.38). The resulting calculation is tested with t-table at degrees of freedom (df) = (n1 - n2 - 2) = (10 - 10) - 2 = 18. and the trust level (a) 0.05 obtained the critical value t-table 2.01 = t-count = 3.811 = t-table 2.014.

Based on the data analysis can be concluded the null hypothesis (H0) is rejected, the working hypothesis (H1) is accepted, so it can be concluded that the running exercise on the sand affects the cardiovascular endurance enhancement more than the running exercise on the tartan track.

IV. CONCLUSION AND SUGGESTION

Based on the problems that have been raised and supported by the theoretical descriptions, research data
obtained, and analysis of data that has been done then it can be concluded that:

- Running exercise in Sand can increase cardiovascular endurance 7.25 ml / kg / min at student of Universitas Negeri Jakarta.
- Running Training on Track Tartan can increase cardiovascular endurance 1.99 ml / kg / min at student of Universitas Negeri Jakarta.
- Running on the sand is better than running on the tartan track in improving cardiovascular endurance 5.26 ml / kg / min at the students of sports science study program, Universitas Negeri Jakarta.

Running on the sand with a run on the Tartan Track can increase the cardiovascular endurance. Both can be an option to improve cardiovascular endurance.

Based on the results of research, suggestions that can be given in the results of this study are as follows:

- Based on the results of this study, the authors suggest to trainers or teachers, in an attempt to improve the ability of cardiovascular endurance can use the run on the
- In searching for samples must pay attention to their physical condition, to pay attention to the level of physical fitness

- For further research, it is necessary to conduct similar research with more sample.

REFERENCES