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The Impact of Reaction Lights-Based Shadow Training on Foot Agility in Badminton Players at Pelangi Pontianak City

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A B S T R A C T

The purpose of the study. The purpose of this study was to find out the effect of reaction light trainingand shuttle run on footwork agility in PB badminton participants Pelangi Pontianak City.

Materials and methods. This study uses this type of experimental research. Inthis study there were two groups of experiments that were deliberately given treatment.

Results. The analysis's findings for the first test's L_{score} test count and the test's final result were $L_{calculated}$, yielding $0.1866 < L_{table}$ 0.2287 and $0.1356 < L_{table}$ 0.2287. Thus, based on the analysis of this data, preliminary test results and final tests of the normal distribution can be drawn. The sample size of 15, mean 2.75, standard deviation 1.02, and t_{hitung} 10.43 are used to determine whether the H_0 or H_a hypothesis is accepted in line with the previously given explanation, after which the price calculated and the price of table t are compared. Price comparison between $t_{calculates}$ to a genuine degree $\alpha = 0.05$ with degrees of freedom (dk) = (n–1) = 14 and presentil values on the distribution table-t; the result was t_{count} (10.43)>t_{table} (1.7613).

Conclusions. There is an effect of training using reaction light tools and shuttle run exercises in improving the agility of footwork (footwork) of PB Pelangi Pontiank City Achievement with $t_{Calculate} > t_{Table}$ Can be taken the decision that there is an effect of training using reactionlights and shuttle run exercises in improving.

Keywords: *Reaction Lights; Based Shadow Training; Foot Agility; Badminton Players.*

A R T I C L E I N F O

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INTRODUCTION

Progress in sports performance has been influenced by developments in science and technology (IPTEK). In the field of sports, developed countries such as China have shown extraordinary achievements, then when compared with other sports such as pencak silat, China is also a country that has become a barometer for improving sports achievements, Sumarjo, S. (2023). People in Indonesia continue to look for new ideas

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abcdeAuthors'Contribution: a-Study design; b-Data collection; c-Statistical analysis; d-Manuscript preparation; e-Funds collection.

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to revive the habit of gold at international events and world badminton events, and continue to improve physical condition training, Yundarwati, S., & Soemardiawan, S. (2023) as well as achievements Indonesian badminton has experienced ups and downs and progress in athletes' achievements. One of the most popular sports in Indonesia is badminton. It is well known in various sporting events such as the SEA Games, ASEAN Games, and the Olympics, as well as in various individual and team badminton championships, Farruhi, in Juang, B. R., & Widodo, A. (2015 pp. 109-117).

The game of badminton and even becoming a badminton athlete is increasingly in demand by various groups of society because their achievements are a source of pride for all their fans, Wijayanto, A. (2023). To produce outstanding athletes, long-term coaching is needed, support from the government in terms of empowerment budget is also very important, which requires systematic and targeted treatment, Kella, Z., Fenanlampir, A., & Rumahlewang, E. (2023). To achieve achievement targets to be proud of at the international level, increasing efforts to cultivate and develop sports must be carried out comprehensively through educational institutions, Hatta, M., (2022). This must be done consistently, planned, and started from school age. Sports organizations must work together with society to achieve this goal. Clubs are very important in badminton coaching because they monitor talent and look for new athletes. Coaches are also responsible for improving athlete performance, so they must be able to use their knowledge from their experience and coaching studies to achieve this goal, emphasized by Lismadiana, L (2023 pp.28-35). According to Rohendi, A., (2020), coaching athletes requires knowledge that is not only intuitive and speculative, but must also be based on the fact that the problem is athlete performance or sports science. Achieving achievement is not only related to the physical; in other words, strong physical ability does not always mean victory in a match. But it depends on many factors and supporting elements including the organization, coaches, athletes and training, training facilities and facilities, training programs, and achievements and funds, Putra, D. O (2023 pp.84-93).

This type of training program, of course, the main thing that requires strength, agility, balance and high physical dexterity. Participating in a regular training program

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helps athletes maintain the required strength. Therefore, many competitions are held for this sport in order to improve the physical condition of the athletes. Garda, R. F., & Fajar, M. K, (2023). Researchers emphasize that badminton players have not used technology optimally in training. The achievements shown by major badminton countries such as China have shown that advances in research and technology have significantly influenced training, including the use of footwok training tools. This begins with an initial investigation carried out by researchers to obtain information about needs analysis in the field. based on an evaluation carried out at 4 badminton clubs in Pontianak City from 5 May to 7 July 2023. This tool has been used in China since 2009, but apparently no one has used this tool in Pontianak, West Kalimantan.

The reaction light is a tool that can be used to guide the direction of Tahir Djide's shadow badminton movements (Ahmad, S. (2019). By using or playing the Reaction Lamp or Shadow Reaction Lamp, namely making shadow movements and strokes in the game of badminton where the movement instructions use lights. there are six of them installed above the net. The reaction lights are a series operated by the coach to provide direction for the movements that must be made by the players. After carrying out the analysis above, the researcher conducted interviews with coaches, trainers and athletes regarding the use of foot movement training tools. The results show that the use of these tools is very necessary, especially to improve foot movement skills when reaching all areas of the badminton court, meaning that with the facts above, the researchers concluded that there is a need for tools to support and assist training sessions related to footwork, Malwanage, et al. (2022).

Based on the description of the background of the problem, many problems have been revealed about how important it is to use technology to support training in every sport, especially badminton. Therefore, the focus of this research is to develop a Reaction Light-based foot trainer for the sport of badminton.

MATERIALS AND METHODS

Study participants

In this study, the number of treatments was 16 meetings, because in the training book it turns out that by practicing 16 times you can be said to be trained, because

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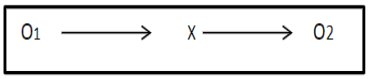
there have been permanent changes (Tjaliek Soegiardo, 25). In this way, it can be known more accurately, because you can compare it with before being treated. (Sugiyono, 2007:108).

Study Organization

Research is an investigation process that is carried out actively, diligently and systematically. And discover, interpret, and revise facts. "Research methods are defined as scientific ways to obtain data with specific purposes and uses" (Sugiyono, 2014). Educational research methods are defined as a scientific way to obtain valid data with the aim of finding, developing and proving certain knowledge so that in turn it can be used to understand, solve and anticipate problems in the field of sports. This research is experimental research because this research requires treatment. Treatment is carried out on variables and the results are seen on the related variables. According to (Arikunto, 2010) experimental research is research that is always carried out with the intention of seeing the effects of a treatment. Experimental research is research that attempts to find the effect of certain variables on other variables under strictly controlled conditions.

The design used in this research is a one group pretest – posttest design, namely a research design that includes a pretest before treatment.



Information :
O_1: Pretest value before treatment is given
O_2: Posttest value before treatment is given
X : Treatment given (reaction lamp exercises and shuttlerun exercises)

Equation 1. Design One Group Pretest Posttest, Source: Sugiyono (2007)

Test and measurement procedures

Data collection will be carried out during pre-test, treatment (treatment) and post-test require the measurement method and measurement. Data collection was carried out at the PB Pentagon Sports Building. Data analysis was carried out to test the hypothesis that had been formulated. The hypothesis test used is the t-test. Before

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carrying out a t-test, the population must first have a normal distribution and homogeneous variance.

RESULTS AND DISCUSSION

The research results discuss several things based on the results of data analysis to find out the results and answer research hypothesis. In detail, the research results discuss data descriptions, analysis test requirements which include normality tests and variance homogeneity tests, as well as research hypothesis tests. After the initial test was carried out, treatment was given and ended with a final test, foot movement agility data was obtained. The data obtained will be analyzed using the t-test at a significance level of 5% (α= 0.05). In carrying out this research, the test was carried out twice, namely the initial test and the final test. The initial test was carried out with the aim of seeing the initial capabilities of the sample before the experiment and the final test was carried out with the aim of seeing to what extent as a result of the experiment there was a significant improvement. This can be done by comparing the final test and initial test against ttable at a significance level of 5% of (df)=n_1=14. if tcount is smaller than t_{table}, this means there is no significant difference.

CONCLUSION

From the results of the research, it can be decided that there is an influence of training using reaction light equipment and training, The shuttle run increases the agility of PB athletes' footwork, Pelangi Kota Pontianak Achievement and can be a resource for badminton coaches in carrying out shadow reaction exercises. Be an insight for athletes and coaches in determining training patterns.

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APPENDIX

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