

EFFECTIVENESS INSTRUMENT TEST ON PLAY-BASED METHOD OF FOOTBALL'S WARM-UP MODEL

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Abstract

This study aims to determine the value of the validity and reliability of the effectiveness instruments of football warm-ups with a play-based method involving students of the University of Singapore in Karawang who took a football course as a research sample consisting of 20 students. The research method used is descriptive research and data collection techniques using test and measurement methods. The instrument used in this research and development was a warm-up instrument used to collect subject data, the results of the sit and reach instrument validity test was 0.979, the Static Flexibility Test - Ankle was 0.913, the Standing balance test was 0.942 while the results of the sit and reach reliability test, Static Flexibility Test - Ankle, and Standing balance of 0.940. From the results of the validity and reliability test, the instrument warm-up can be used. Researchers suggest that warm-up instruments be used by coaches to measure muscle, joint and body balance in soccer athletes, especially in the Karawang area of West Java.

Keywords: validity, reliability, Effectiveness Test, warm-up model, football, play

INTRODUCTION

Prior to the implementation of the core training activities and the football match, a warm-up was held. Good warm-ups are fundamental in ensuring a productive training session. soccer players can adapt to the climate which may be different from the climate in their native area. Environmental conditions such as temperature and humidity must be included in the calculation. Lack of warm up can also pose a risk of injury during exercise. As a general guideline, warm up with sufficient intensity to sweat. Sweat signifies increased muscle temperature. Warm-up and stretching become the most important part of every sports activity, during training or during competition. A proper warm-up will take between 10 to 40 minutes and the time must be structured into planning events or matches. Senior athletes can usually take an hour or more to warm up and prepare for the match.

The main purpose of warm-up is to prepare emotionally, psychologically, and physiologically to carry out various kinds of training activities and competitions. Every training and match, warm-up provides an important role to bring players or instill a first impression to the player about what will be done at the core of the practice and match. Besides stretching exercises aim to increase the range of motion progressively and

permanently. Before doing stretching exercises you should first do warm up exercises. There are three categories of routine warm-up exercises, namely: 1. Passive warm-up, which is a warm-up exercise using equipment such as the use of heating pads, a hot shower. 2. General warm-up, this technique uses several movements that vary and indirectly relate to the movements used in sports training itself. 3. Formal warm-up (specific warm-up), heating which includes movements that mimic the movements used in actual sports activities, with a reduced intensity (decreasing).

One effort to be able to understand and know about football warm-ups through movements carried out by referring to the technique of playing football both with the ball and without the ball. Players will focus on warming up because it is made with a lot of variety and with the ball media. The shape of the warm-up model will be developed with 3 parts, namely: 1) General warm-up training with the ball with 5-7 minutes, 2) specific warm-up training focusing on the components of strength, plyometrics, balance and agility with the ball with time 10-15 minutes, 3) Football specific movement and speed with a time of 2-4 minutes.

Observations on the field show that, warming / warm-up playing football has not yet reached readiness for activity seen in muscles and joints and the balance of the player's body when doing core activities. Then the results of the researchers' training program without a warm-up test to measure muscle readiness, joint flexibility and body balance, athletes doing warm-ups are not serious and joking is limited to routine activities before playing football. Elsewhere, coach researchers have not been able to measure the achievement of the warm-up done by the athlete so that injuries occur to players and the effects after playing, players feel cramps in their muscles. Based on the findings from the background of the problem described above, the researcher wants to test the validity and reliability of the effectiveness of the Play-based football warm-up model so that the coach can measure the achievement of the football warm-up for the athlete's readiness to carry out core activities.

Test and measurement

Understanding tests and measurements according to Widiastuti (2015) argues that tests are a tool used to measure some performance and to collect data. A test must be valid, which means measuring what should be measured and should be trusted, which means it can be repeated many times. which comes from the test. Evaluation is the process of placing values on these measurements. From the recorders Nurhasana and Hasanudin

(2007) "measurement is the process of collecting data or information from a particular object, in the measurement process required a measuring instrument ..."

From some opinions about the definition of test and measurement, it can be concluded that the test and measurement is a tool used to measure scores to collect data and information from a particular object.

Validity

"Validity comes from the word validity which means the extent to which the accuracy and accuracy of a measuring instrument in carrying out its measurement function ..." (Widiastuti, 2015). This means that there is a match between the measuring instrument with the measurement function and measurement targets. According to Ismaryanti (2008) "validity is a measure that states the accuracy of test objectives (measuring devices) and meets the requirements of making tests. The validity of the test shows the degree of agreement between the test and the attributes to be measured ... " From the description above it can be concluded that a valid test is a test that can produce a valid measurement and a test in accordance with what you want to be measured.

Reliability

According to Purwanto (Elina, 2012) "reliability comes from the word rely which means to believe and reliable which means to be trusted." According to Widiastuti (2015) "... reliability has various other names such as trust, reliability, constancy, stability, consistency, and so on. But the main idea contained in the concept reliability is the extent to which the results of a measurement can be trusted. " From the description above it can be concluded that a reliable test is a test that can produce a size that is steady and remains in accordance with the symptoms measured. The reliability of a test shows the degree of constancy of the results obtained from multiple tests on the same subject, the same measuring instrument, and the same procedure

Sit and reach body flexibility

The purpose of the sit and reach flexibility test is to measure body flexibility. The equipment used is: a) Measuring tape in cm with a minimum length of 2 meters b) Wall or plank perpendicular to the flat floor c) Stationery d) Test form. Test implementation a) Measuring tape placed straight on the floor, with the letter zero on the edge of the wall, teste releasing socks sitting on the measuring tape sitting b until the full cm, measurements from the walls of the legs of the knee brace can be bent. d) Then test to reach both arms forward as far as possible and place the two fingers of the taangan fingers on the ribbon as far as possible the stage of achievement is at least 3 seconds e) The distance of the

achievement is recorded to full centimeters. Complete the achievement 2 times in a row, and the farthest achievement distance calculated. f) Flexibility of the body is measured by the difference between the distance achieved by the foot distance in centimeters.

Static Flexibility Test - Ankle

The purpose of this test is to monitor the development of athlete's ankle flexibility. Tools and facilities used a) Wall b) Ruler 1 meter c) Test Assistant a) Standing facing the wall b) Flat feet on toes touching the wall c) Leaning against the wall d) Slowly sliding the foot backward from the wall as far as possible e) Keep your feet flat on the ground, body and knees fully stretched and chest against the wall f) Measure the distance between the toe line and the wall g) Repeat the test 3 times and record the best distance

Standing balance test

The purpose of this test is to measure body balance. Tools and facilities used a) Flat surface b) Stopwatch c) Stationery and test formulies. Carrying out the test a) Teste standing on one leg for as long as possible b) Before the test begins the testee is allowed to do the trial for 1 minute c) Teste standing on 1 foot, while the other hand is above the head, with tiptoe d) Demonstrate this attitude for as long as possible what can be done by the teste f) Stopwatch is stopped when the raised leg touches the ground or the teste loses balance

Warm-up

Understanding warm-up (warming) is very broad, Burke Edmund R (2001) defines with some movements to prepare the body to perform heavier activities by doing some simple exercises before doing the core of heavier activities. Byl Jhon (2004) argues that heating is a movement that aims to increase the frequency of the heart in a slow manner, so that there is enough time to fill the muscles that work with oxygen-rich blood. The other side of warm-up according to Rusli Lutan (2000) is one form of emotional, physiological and psychological preparation to do various kinds of exercises. From a number of opinions about the definition of warm-up, it can be concluded that warm-up is the body's preparatory activity to increase the frequency of the heart and stretching of the muscles aimed at preparing emotionally, physiologically, and psychologically to do a variety of exercises.

Soccer Warm-ups

To present football warm-ups it is necessary to plan an appropriate method of warm-up movement in order to achieve the goal of preventing sports injuries, increasing body temperature and increasing muscle work. This methodology in the AFC, C License Award

(1999) is directed so that soccer players really do warm-up movements in accordance with the demands and concepts that have been presented by the coach. First understood by the players the benefits of warming up and the consequence of less / not warming up. Second, the idea of movement with elements that support the game to improve the ability of soccer techniques. How many warm-ups are done before training and soccer matches that have developed both conventionally and FIFA 11+ warming-ups are done. The conventional concept model is often used heating with static motion and dynamic motion. While the concept of the FIFA 11+ warming-up model contains a comprehensive warm-up method developed by those who have a great interest in football-medicine. FIFA 11+ consists of 3 parts according to FIFA (2012) first combining low speed running with controlled body contact with training partners. The second part involves 6 different types of exercises to improve strength and balance. The last part is training with high speed running combined with specific football movements either by passing, dribbling or kicking the ball.

Play Based Warm-up Soccer Model

The concept of playing-based football warm-up model according to Qorry (2017) is: a) General warm-up, it uses several movements that are varied and indirectly related to the movements used in soccer practice. This technique is calisthenics movements, brisk walking, jogging and jumping, b) specific warm-ups, warm-up which includes movements that mimic the movements used in football both with the ball and without the actual ball, c) football specific movements both by passing, dribbling, kicking the ball, heading and throwing and catching for the goal keeper ..

Soccer

In playing football, the most dominant aspect that needs to be considered by the instructor / coach is the mastery of the basic skills of the player itself, which is a requirement to achieve the best performance of each player. A good team or team has no short cuts other than doing repetitive training for a relatively long time. According to Aang Witarsa (1984) The basic technique of playing football is all movements without the ball and movements with the ball needed to play football.

The basic technique of playing football is used based on the principle of attack, and the principle of defense. The basic techniques of playing football according to Sean Callery (1991) are: (1) passing the ball (passing), (2) dribbling, (3) shooting, (4) controlling (control), (5) heading (heading), (6) trickery, (7) special for the goalkeeper. Another opinion from the AFC states training material for football as follows: (1) dribbling, (2) ball feeling, (3) passing and support, (4) controlling, (5) running with the ball, (6) tackling, (7))

shooting, (8) creative football, (9) goalkeeping, (10) small side games, (11) defending play, (12) attacking play, and (13) team organization in 11 versus 11.

Soccer training must pay attention to and understand the principles of training studied in physiology, theories of growth and development of children, psychology, nutrition and pedagogics so that peak achievements can be achieved according to plan. Besides that aspects of training that need to be developed especially the right basic movement skills with good basic physical abilities. Each trainer is required to understand the stages of these aspects of the training so as to know the portion of the training for multilateral and specialization.

Playing Theory

Bruner in Hurlock's book states that playing is a serious activity, he further explained that playing provides opportunities for many forms of learning. Two of them are very important are problem solving and creativity. Without playing the basis of creativity and the basis of problem solving cannot be laid before the child develops habits to deal with the environment in creative ways. And added by Hurlock that play is an activity carried out for the pleasure generated without considering the final result.

Hetherington and Parke mention three main functions of play namely: Cognitive function of play that helps cognitive development of children. Through this play, children will more easily explore the environment and learn the objects around them and learn to solve the problems they face. The social function of playing is that it can enhance the social development of children, especially in playing fantasy by playing a role. Children learn to understand other people and the roles they will play in the future after growing up to become adults. The function of playing emotions allows children to solve some of their emotions, learning to overcome anxiety and inner conflict. Because playing allows children to release excessive physical energy and free up pent-up feelings.

METHOD

Research method that will be used in this research is descriptive method. In order to use descriptive methods in solving problems faced with being able to achieve the desired results the researchers used the test and measurement methods. The validity used is the Bivariate Pearson correlation (Pearson Moment Product) and the reliability using Cronbach's Alpha.

Research design is a framework used to carry out research. Research design provides procedures for obtaining information needed to compile or solve problems in research. For more details, the research design can be seen through the image below:



Figure 1. Research Design

Note. x = Sample
 y = *Tes Warm-Up* (Validity dan Reliability)
 z = Result

The steps of the research must be a systematic sequence of sequence, so that it can support to solve the problem until finally it reaches a conclusion.

In sampling, the sampling technique used was random sampling. From a population of 150 students of football courses taken 20 students randomly to be used as research samples. Prosuder data collection in accordance with the research design, namely 1) random sample selection. 2) provision of warm-up tests for data retrieval 3) analysis of data from test results. Since the data needed in this study is primary data, the data collection is carried out by carrying out tests. The tests that will be performed are sit and reach test, Static Flexibility Test - Ankle, and Standing balance. Research instruments and the implementation process are based on the indicators of the need for warm-up in football and adjusted for the age of students. Then test the validity and reliability of the instrument that will be used for research

Data obtained as individual scores from the results of the sit and reach test, Static Flexibility Test - Ankle, and Standing balance, then the test result data in the validity test using Bivariate Pearson correlation (Pearson Moment Product) and reliability using Cronbach's Alpha. So that researchers can find out the level of validity and reliability of football warm-up instruments.

RESULT AND DISCUSSION

Table 1. Instrument Validation Test Result

| | | Sit_and_Reach | Fleksibility_Angle | Standing_Balance | Skor_Total |
|--------------------|---------------------|---------------|--------------------|------------------|------------|
| Sit_and_Reach | Pearson Correlation | 1 | .846** | .924** | .979** |
| | Sig. (2-tailed) | | .000 | .000 | .000 |
| | N | 20 | 20 | 20 | 20 |
| Fleksibility_Angle | Pearson Correlation | .846** | 1 | .745** | .913** |
| | Sig. (2-tailed) | .000 | | .000 | .000 |
| | N | 20 | 20 | 20 | 20 |
| Standing_Balance | Pearson Correlation | .924** | .745** | 1 | .942** |
| | Sig. (2-tailed) | .000 | .000 | | .000 |
| | N | 20 | 20 | 20 | 20 |
| Skor_Total | Pearson Correlation | .979** | .913** | .942** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 20 | 20 | 20 | 20 |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2. Decision of the validity of the Football Warming Up Effectiveness Test Instrument

| No | Item Tes | rx | Rtable0,05(20) | Note |
|----|---------------------------------|-------|----------------|-------|
| 1 | <i>sit and reach</i> | 0,979 | 0,444 | valid |
| 2 | Static Flexibility Test – Ankle | 0,913 | 0,444 | valid |
| 3 | Standing balance tes | 0,942 | 0,444 | valid |

The conclusion from the above table rcount> rtable then the three instruments of the Football Warming Up Effectiveness Test are declared valid

Reability Test

Reliability Test Results for the Effectiveness of Football Warming Up Effectiveness Test Instruments

| | | N | % |
|-------|-----------------------|----|-------|
| Cases | Valid | 20 | 100.0 |
| | Excluded ^a | 0 | .0 |
| | Total | 20 | 100.0 |

| | | N | % |
|-------|-----------------------|----|-------|
| Cases | Valid | 20 | 100.0 |
| | Excluded ^a | 0 | .0 |
| | Total | 20 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

Table 3. Item-Total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---------------------|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| Sit_and_Reach | 7.50 | 2.158 | .948 | .854 |
| Fleksibility_Angkle | 7.50 | 2.579 | .813 | .959 |
| Standing_Balance | 7.50 | 2.474 | .872 | .915 |

Table 4. Decision of the validity of the Football Warming Up Effectiveness Test Instrument

| No | Item Tes | Cronbach's Alpha | Rtable0,05(20) | Keterangan |
|----|--|------------------|----------------|------------|
| 1 | <i>sit and reach</i> , Static Flexibility Test – Ankle, dan Standing balance tes | 0,940 | 0,444 | Konsisten |

The conclusion from the above table count > rtable then the three instruments of the Football Warming Up Effectiveness Test are declared Consistent. In this chapter, the stages of research that have been carried out by researchers will be reported. Researchers have tested the research instrument in the form of the effectiveness of the Football warm-up test instrument. This test is a measuring tool to see the effectiveness of a football warm-up model. It is based on research variables and indicators and refers to the theoretical study that has been proposed in Chapter II.

The results achieved, the results of the instrument it and reach validity test of 0.979 > rtable, Static Flexibility Test - Ankle of 0.913 > rtable, Standing balance test of 0.942 > rtable then the three instruments of the Warming Up Football Effectiveness Test are valid while the results of the sit and reach reliability test , Static Flexibility Test - Ankle, and Standing balance of 0.940 then the three instruments of the Football Warming Up Effectiveness Test are declared Consistent.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusions of this study are: The level of validity and reliability of sit and reach instruments is 0,979, Static Flexibility Test - Ankle is 0,913, Standing balance test is 0,942 while the results of sit and reach reliability test, Static Flexibility Test - Ankle, and Standing balance is 0,940 . Based on the interpretation criteria, the validity value is declared high and the reliability value is stated to be very high.

Suggestions

Based on the above conclusions, the authors provide suggestions that can measure the achievement of the implementation of the play-based football Warm-up model, namely: a) For coaches to use sit and reach, Static Flexibility Test - Ankle, Standing balance test as an effort to measure the achievement of Warm -up soccer based play b) Further research needs to be carried out with a wider sample c) In this study there are still many shortcomings, for that further researchers should develop and perfect this research instrument.

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