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The instrument of the push stroke technique skill in table tennis: validity and reliability

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ABSTRACT

The test is a very important data collection tool to assess the abilities possessed by an athlete, the push push skill test in table tennis is not yet available so that coaches and martial arts athletes evaluate the performance of their athletes. This study aims to find out the validity and reliability of the push-punch technique skill test instrument in table tennis. The stages that will be carried out in this research are that the researcher will design the test, after the test is successfully made, the next step is to validate the test and test the reliability of the test. The population in this study were all deepening table tennis students, while the sampling technique used was saturated sampling so that the entire population of 32 people was used as a sample. The results showed that the validity of this test was in the very good category and the reliability of this test was in the high category, so it is hoped that this test can be used by coaches to evaluate the skills of their athletes.

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Introduction

Sport is a form of physical activity that has complex dimensions. In exercising, individuals have different goals, including: for achievement, physical fitness, or recreation. The nature of sport is also a physical activity that contains the nature of the game and contains struggles against oneself or with others or confrontation with natural elements (Pujianto, 2015; Kusnedi & Johor, 2019; Haryanto & Welis, 2019). Table tennis is one of the most popular sports for the wider community (Lanzoni et al., 2014; Zoran et al., 2019). Table tennis can be played and can be enjoyed by all family members, providing exercise and entertainment to players of all age levels, from early childhood, teenagers, and adults. Table tennis also provides many other benefits, namely in good physical, mental and social growth. (Mahendra et al., 2012; Purwanto & Suharjana, 2017; Rachman et al., 2017). The increase in the athlete's ability can be known by conducting tests. Tests are used to identify and develop players' abilities both physically and in terms of skills (Purashwani et al., 2010; Atmaja & Tomoliyus, 2015; Yulianto, 2015). Ideally, every component of technical and physical skills in sports can be mastered by the players and can also be measured by standardized tests (Asri et al., 2017; Tabrizi et al., 2020). However, in reality, not all components of sports skills can be identified, this is due to the limited availability of tests that are specific to certain sports and table tennis is no exception. The absence of a test to assess the skill of the push technique will have an impact on the difficulty of knowing how good the technique is done by table tennis players. According to (Liskustyawati et al., 2018) there are several problems in the table tennis sport that hinder its progress, one of which is the unavailability of an adequate evaluation system. Instruments have a crucial function in a research. The accuracy of the data taken is also influenced by the level of validity of the research instrument. The validity of research instruments will also affect the accuracy of

research conclusions (Benty et al., 2020). In addition to evaluation problems, the lack of funding and limited time to improve achievement nationally are also obstacles today. There have been several tests designed to assess the ability to play table tennis, but tests to assess the skill of the push stroke technique have not been carried out. Therefore, researchers are interested in designing this push punch technique skill test in the hope that it can be used by coaches and other sports practitioners to assess the progress of the push punch skills possessed by the athlete.

Push strokes are the simplest and easiest to do. With push strokes, players will be able to control the ball, coordinate the touch of the ball, and develop the rhythm of the game. Spin on this push is very little and can be used for two kinds of purposes, namely neutralizing the return of the opponent's ball and slowing down the speed of the game and attacking the opponent by hitting the ball that is directed as far as possible from the opponent's position. In an urgent situation, push punches can be combined with other strokes such as drives or loops (Sutarmin, 2007). A push is a passive backspin shot made against backspin. This is generally done against a backspin or push serve so that you don't feel comfortable hitting the shot, either for tactical reasons or because pushing is a more consistent way of countering backspin. The trick is to push the opponent from attacking effectively. Keep the ball low, place it well, and provide good backspin. The easiest way to return the ball with backspin is with push backspin. This push is useful for returning backspin serve or for returning a ball that is not ready to attack. A push can be attacked, but a good push can make the attack difficult.

Movement skills tests are very important in their position in sports, there are several types of tests that have been designed by previous researchers including research conducted by (Katsikadelis et al., 2014) this study seeks to re-find the reliability of some of the skills needed in table tennis. such as reaction speed, transfer speed, and coordination possessed by athletes. Although the three test components were tested on the test, the test that led to the skill of a technique had not yet appeared on the test. Other studies have also been carried out to enrich the types of tests available in the table tennis sport, one of the techniques designed is the footwork test instrument. Good footwork is needed in table tennis, the support of the feet will be a good basis for the creation of a quality stroke (Suhermon & Witarsyah, 2019). The latest research related to skill instruments in the sport of table tennis tries to assess the smash technique, there are many ways that players can do to hit a smash, how to assess a good smash implementation, that is the test that the researcher is trying to design (Indrawan et al. , 2020). Recent research related to tests in the sport of table tennis has begun to lead to tests of hitting technique skills. Researchers also want to contribute to developing other stroke skills tests that have not yet been designed, one of which is the assessment of push skills in table tennis, so it is hoped that future researchers who will research table tennis will have a test kit that can be used. This study aims to find the validity and reliability of the push punch technique skill test in table tennis.

Method

This study uses a quantitative approach and descriptive method. Researchers want to know how much validity and reliability of the push punch technique instrument in table tennis. This research was conducted on Saturday, June 26, 2021 and Sunday, June 27, 2021, located at GOR UNP, Padang City. The population in this study were all students who were taking in-depth table tennis courses totaling 32 people, while the sample was all of these students, due to the small number of population so the sampling technique was census or total sampling.

This study aims to find the validity and reliability of the instruments made. Data collection of instrument validity will be carried out by means of content validity and empirical validity. Content validity is carried out by giving instruments that have been designed to three experts, including test and measurement experts, table tennis coaches, and table tennis lecturers. After the validity of the contents of the instrument was met, it was continued by conducting tests on 32 samples which were carried out by two table tennis coaches.

After collecting instrument validity data, the next step is to collect instrument reliability data by means of tests and retests. The sample was tested using a valid instrument on two different days. To analyze the data that has been obtained, a simple correlation test will be carried out. The data on the push punch skill test conducted by the sample will be correlated with the results of the test conducted by the judge. If the correlation value is high, then the results will determine the validity of the instrument made. After that, the researcher will analyze the reliability level of the instrument by looking at the correlation between the results of the push punch technique test on the first day and the test on the second day. Statistical analysis used to determine how high the level of reliability of this instrument is Pearson product moment correlation.

Results and Discussions

The results of the validity test that have been carried out state that the correlation between the results of the push punch skill test using a test designed with an assessment carried out by the judge has a correlation level of 0.78 which means it has a very good correlation so that it can be interpreted that this instrument is valid to be used to measure hitting skills. push in table tennis. In addition, the results of the validity test using the retest method also showed 0.88 results, which means that this instrument has a high level of reliability so that it can be used to test push skills in table tennis.

Tests that measure technical skills specifically are really needed to support athlete's achievement in the future. Accurate tests will provide input to players and coaches so that they can help athletes achieve peak performance (Müller et al., 2000). Test results that have a good level of validity and reliability will also help the process of finding talent for coaches so that they can get athletes who have the potential to be successful when they grow up (Hopkins et al., 2001; Smekal et al., 2000; (Girard et al., 2001; Smekal et al., 2000; (Girard et al., 2000). al., 2006)

In a table tennis coaching many factors are needed in the coaching process. A good table tennis coaching process is if it is supported by adequate equipment and facilities, effective training methods, effective training programs, effective talent scouting processes, evaluation or assessment of training results, sufficient funds, the ability of coaches, management and organizations that are good.

In addition to training programs, evaluation also has an important role in the athlete development process. Any training program cannot be separated from evaluation, because with an evaluation it will be easier for the coach to provide input, correct, correct errors, and assess the success of the training process carried out by athletes. The process of monitoring the hitting ability of athletes is very necessary so that coaches can find out what aspects need to be improved on the athletes they are training (Kulkarni & Shenoy, 2021)

In fact, in the training process, evaluation is not carried out, even if there is an evaluation carried out by table tennis coaches without using standard instruments, this is because there is no table tennis instrument that assesses standard table tennis forehand and backhaand drive techniques. The assessments are interrelated so that if in the training process there is no assessment instrument used for the evaluation basis, the training process is optimal. (Rihtiana & Tomoliyus, 2014)

Conclusions

Based on the results and discussions that have been discussed previously, it can be concluded that the test instrument for the push stroke technique skill in this table tennis sport has a high level of validity and reliability so that this test can be used to measure push technique skills.

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