



## **The Contribution of Flexibility and Strength Training to the Results of Mawashi Geri's Kicks in Padangsidempuan Male Athletes**

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### **Abstract**

This study aims to determine the Contribution of Flexibility and Strenght Training to the Results of Mawashi Geri's Kick in Male Athletes of Dojo KODim 0212 TS Padangsidempuan City. The research method used is an experimental method. The population in this study amounted to 40 people. The sampling technique used is Purposive Sampling. The number of athlete samples used was 20 people. This study was carried out for 8 weeks with a frequency of exercise 5 times each week. From the calculation of data and hypotheses, namely the contribution of Flexibility and Strenght training to the results of Mawashi Geri's Kick in male athletes of Dojo Kodim 0212 TS Kota Padangsidempuan, shows that there is a significant contribution together between Flexibility and Strenght training to the results of Mawashi Geri Kick in male athletes of Dojo Kodim 0212 TS Kota Padangsidempuan. This illustrates that Flexibility and Strenght training contributed to Mawashi Geri's kick results due to monitoring from the coach with the improvement in physical condition so that the calculation of data for the third hypothesis of the concurrent contribution of Flexibility and Strenght training to Mawshi Geri's kick results was a significant contribution.



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## INTRODUCTION

According to (Siti Aminah, Syamsuramel, 2017) sports are known to be closely related to fast movements, both in parrying punches and kicks. (Amelia et al., 2022) Exercise is a series of regular and planned physical movements that people do consciously to improve the ability to function according to the purpose of doing exercise. Sukirno (2012: 21) in (Geri et al., 2021) explained that sports in the sense of achievement are sports that are contested and competed with valid regulations through championship events from regional, national to international sports that are competed or contested both at the National and International levels.

According to (W et al., 2018) Karate is one of the sports that is quite popular and much loved by people in the country and has been able to bring the fragrant name of the Indonesian nation in international forums. (Hutanty, 2013) Karate is one of the martial arts sports that use bare hands. (Lamusu & Lamusu, 2020) Karate is one of the martial arts from Japan that has a purpose for self-defense. (Purba, 2017) Karate is one of the martial arts sports that aims to maintain and even improve physical condition, besides that karate is one of the sports competed at national and international levels. From the championship produced many good athletes even in recent years the sport of karate has become one of the branches that is expected to compete at the international level, as evidenced by the inclusion of several athletes who have passed the selection and will take part in international championships and follow training coaching for long-term programs. According to Soekarman (1987; in Same, 2021) high physical condition can only be achieved through hard training, and the way of training is

not enough to practice that sport alone. But it must be prepared specifically, which is in accordance with the needs of each sport he is involved in. Although training is carried out continuously, repeatedly and systematically, if it is not accompanied by additional weights, the athlete's performance will not increase. In order for practice to be effective and beneficial, it must be based on principles.

In this study linking flexibility with basic yoga movements which are mentioned in Pujiastuti Sindhu (2006) types of Asana movements consist of several types, namely: standing posture, balance posture, sitting posture, sitting posture bending forward, chest opening posture, arm and wrist strengthening posture, hip joint flexing posture, spine twisting posture, inversion posture (reverse) and restorative posture (relaxation). Yoga movements are able to stretch their muscles and joints to be more flexible in doing movements while flexing their bodies. Yoga movement techniques Standing Posture Bending Down (Padahasthasana), Sitting Posture Bending Forward (Paschimottanasana), Sitting Posture With One Leg (Janu Shirsasana), Stretching Legs Posture (Hanumanasana) and Pulling Legs Back Posture (Virabhadrasana). According to (Manullang, 2017) Mawashi geri kick is a kick technique whose movement trajectory forms a semicircular line that is swung from the outside to the inner side. (Sasmita et al., 2022) The mawashi-geri kick is a basic kick technique in karate that is used to attack, almost all parts of the body. The factors that determine the ability of mawashi geri kicks are stability, balance, kick accuracy, speed, tempo and strength. According to (Suharti, 2016) Flexibility is the effectiveness of a person in adjusting himself to carry out all body activities with the widest extendance, especially the ligament muscles around the joints. (Sugarwanto, 2020) Flexibility

is the ability to perform joint movements through a wide range of motion. According to Alim (2012) in (Yaqin et al., 2019) limited flexibility ability can also lead to poor mastery of techniques and low performance. Rusli Lutan (2003) in (Lubis & Nasution, 2021) flexibility is defined as the ability of joints and muscles, as well as the surrounding joint straps to move freely and comfortably in the maximum expected space, optimal flexibility allows a group or a joint to move efficiently. While Didik Zafar Sidik et al (2019) emphasized that "Flexibility or flexibility is the body's ability to make widest movements in joint space, and is strongly supported by and depends on the elasticity of muscles, tendons, and ligaments". Flexibility is one of the elements of physical condition that determines in learning movement skills, preventing injury, developing strength, speed, endurance, agility, coordination.

According to (Pranata, 2016) Explosive power is the ability of muscle work that allows muscles to perform physical labor explosively. Muscle strength is a very important foundation in other biomotor development. Strength is an element of physical condition that is very important in the development of technique, tactics, strategy and mentality. Strength forms a posture to be ideal. Muscle strength will reduce the risk of injury when training or competing. Muscle strength contributes in increasing self-confidence. Muscle strength is the key to success in facing matches. Strength training is a means of exercising that is structured and planned with proper resistance so that the athlete gradually develops into a strong one. That muscle strength is a component of a person's physical condition created by a muscle or group of muscles that the body uses and fights resistance or loads in certain activities and protects the body from injury. Muscle strength is one of the

supports for a person to achieve maximum performance.

This presentation is one of the rationales in making this thesis. According to (Andibowo, 2019) In karate martial arts kicks / (Geri) is one form of Karate basic techniques that has a very important role in karate martial arts. Based on field experience while observing at the training ground, the author saw that karate athletes during training often use Mawashi Geri kicks because the highest points in karate include Mawashi Geri kicks. But during the author's observation of three meetings, the author saw that there were shortcomings when doing Mawashi Geri kicks which included one of the foot flexibility in athletes so the author needed to do research on the flexibility in athletes who were conserved. At the time of observation, the author also took the time to interview the coach who owns the training ground and at the time of the interview the coach said that many of his members had stiff body flexure including the legs.

When kicking requires stretching muscles in order to be able to produce good movements and be able to prevent injury, the components of flexibility and strength are needed in karate. In addition to being able to produce good kicks, it is also able to prevent injuries when doing Mawashi Geri kicks and to improve the results of Mawashi Geri kicks, it is necessary to practice yoga.

## **METHODS**

This study uses quantitative research methods Treatment is given with data collection techniques using tests and measurements. The procedure for data analysis techniques in this study is Data obtained as individual scores, both from the Sit and Reach Test, Back and Leg Dynamometer test and Mawashi Geri

kick results. Furthermore, the data is processed using statistical procedures that use regression calculations, normality tests and homogeneity tests.

### Participants

According to Sudjana (2010) "Population is the totality of all possible values, results that calculate or measure, quantitative and qualitative about certain characteristics of all members of a complete and clear group who want to study their properties. The population in this study was male athletes at Dojo Kodim 0212 TS Kota Padangsidimpuan which amounted to 38 people.

### Sampling Procedures

The sample is part of the existing population, so for sampling must use the Purpif Sampling technique. Sudjana (2002: 168) states that: "Purposive sampling is sampling based on individual and researcher considerations". The sample in this study was 20 male athletes after observation and initial data collection.

### Materials and Apparatus

Initial data collection using flex and strength instruments, namely Sit and Reach Test and Back Leg Dinamometer.

### Procedures

Before the test begins, all athletes (samples) are collected to be given direction and explanation from research on test implementation so that the test taken will be objective and there are not many errors in conducting the test. After being briefed, the athlete (sample) conducted an initial test (pre-test), namely the Sit and reach test, Back leg Dinamometer test and Mawashi geri kick test.

And after the Pre-test can be obtained, then the sample performs a variation form of yoga practice for 8 weeks, then a Post-test (final test) is

obtained and then processed with statistical procedures using regression calculations, normality tests and homogeneity tests. After all research procedures are carried out, the results will be obtained whether or not there is a significant contribution to the results of Mawashi geri training on the male athletes of Dojo Kodim 0212 TS Kota Padangsidimpuan.

### Design or Data Analysis

This research is an experimental study. Experimental research is research intended to determine whether there is a result of "something" imposed on the subject of research (Suharsimi, 2006: 207) the research design used is in the form of One Group Pre-test and Post-test design, which is an experiment carried out on one group only without a comparison group.

The data obtained as individual scores, both from the Sit and Reach Test, Back and Leg Dynamometer test and Mawashi Geri kick results. Furthermore, the data is processed using statistical procedures that use regression calculations, normality tests and homogeneity tests, with calculation steps.

### RESULT

The first hypothesis analysis is the contribution of training from Flexibility to the results of Mawashi Geri's kick in male athletes of the 0212 TS Kodim dojo in Padangsidimpuan City in 2021, obtained

$$F_{hitung} = 109,95 \text{ and } F_{tabel} = 4,41 \text{ so}$$

$$F_o > F_t \text{ based on the criteria for testing the}$$

hypothesis in this study concluded that, there was a significant contribution from Flexibility training to the results of Mawashi Geri Kick in male athletes of Dojo Kodim 0212 TS Kota Padangsidimpuan. The second hypothesis analysis is the contribution of training from Strength to the results of Mawashi Geri's kick on male athletes of Dojo

Kodim 0212 TS Kota Padangsidimpuan Year 2021, obtained  $F_{hitung} = 61,05$  and  $F_{tabel} = 4,41$  so  $F_o > F_t$  based on the criteria of

hypothesis testing in this study concluded that, there was a significant contribution from Strenght training to the results of Mawashi Geri's kick in male athletes of Dojo Kodim 0212 TS Kota Padangsidimpuan. The third hypothesis analysis is the contribution of Felkxibiliti and Strenght training to the results of Mawashi Geri's kick in male athletes of Dojo Kodim 0212 TS Padangsidimpuan City in 2021. Retrieved  $F_{hitung} = 53,19$  and  $F_{tabel} = 18,15$  so  $F_o > F_t$  based on the criteria of

hypothesis testing in this study concluded that, there was a significant contribution together between Flekxibiliti and Strenght training to the results of Mawashi Geri Kick by 53.19% in male athletes of Dojo Kodim 0212 TS Kota Padangsidimpuan.

## Tables & Figures

**Table 1.** Test Data Normality.

Variabel	Track Dan Simpangan Baku	L <sub>o</sub>	L <sub>t</sub>	$\alpha$	Ket
Data Post-Test Flexibiliti	$\bar{X}_i = 49,98$ S = 10,00	- 0,9279	0,190	0,05	Normal
Data Post-Test Strenght	$\bar{X}_i = 49,76$ S = 9,93	- 0,7186	0,190	0,05	Normal
Data Post-Test Tendangan Mawashi Geri	$\bar{X}_i = 49,99$ S = 9,96	- 0,8997	0,190		Normal

Testing data normality using the lilifors test, from the column of the post-test flexibility list obtained lo = -0.9279 and table 0.190 with n = 20 and real level = 0.05. Since l count < l table it can be concluded that the sample comes from a normal population. Testing data normality using the lilifors test, from the column of the post-test list strenght

obtained lo = -0.7186 and table 0.190 with n = 20 and real level = 0.05. Since l count < l table it can be concluded that the sample comes from a normal population.

Testing data normality using the lilifors test, from the post-test list column of mawashi geri kick results obtained lo = -0.8997 and table 0.190 with n = 20 and real level = 0.05. Since l count < l table it can be concluded that the sample comes from a normal population. Test homogeneity between pre-test data and post-test data of mawashi geri exercise values  $f_{tabel}$  to  $\alpha = 0,05$  and  $v_1 = n - 1$  and  $v_2 = n - 1$  Retrieved  $f_{0,05(5,5)} = 5,05$ . This means that  $f_{hitung} < f_{tabel}$  ( $1,29 < 5,05$ ). So it can be concluded that the pre-test and post-test data of mawashi geri kicks are homogeneous. From the results of testing the third hypothesis, namely the contribution of flexibility and strength training to the results of mawashi geri kicks in male athletes of the 0212 TS kodim dojo in the city of padangsidimpuan. Retrieved  $F_{hitung} = 53,19$  and  $F_{tabel} = 18,15$  so  $F_o > F_t$  Based on the criteria for

hypothesis testing in this study concluded that, there was a significant contribution together between flexibility and strength training to the results of Mawashi Geri's kick by 53.19% in male athletes of Dojo Kodim 0212 TS Kota Padangsidimpuan.

## DISCUSSION

The coach conveyed several complaints that occurred in the dojo, one of which was that many of its members had stiff bodies, especially on the legs. Lack of flexibility when doing mawashi geri kicks. So it is necessary to provide flexibility and strength training which hopefully can be a solution to increase body flexibility, especially when doing mawashi geri kicks so that it can enhance the achievements of karate athletes. Yoga

is a unique combination of movements that are beneficial for improving physical health and breathing and meditation that can provide peace of mind. In yoga movements we are familiar with breathing and relaxation. In addition, in yoga movements there are also increasing flexibility, strength, relieving tension, and providing new energy to our bodies. The program carried out is less systematic so that it cannot improve physical ability atelt to improve physical ability and good exercise, some of the physical components that are considered to be developed are cardiovascular endurance, endurance strength, muscle strength, flexibility, speed, stamina, agility, and also power. Flakxibility and strenght exercises are forms of exercise that can improve flexibility and strength.

The training program must be systematically arranged for male karate athletes dojo kodim 0212 TS padangsidimpuan city for 8 weeks (40 meetings). Every athlete is required to exercise as much as possible and seriously follow the instructions of the coach. The failure of the results of the analysis of the flexibility and strenght training hypotheses was due to the length of the athlete's legs being different so that when doing mawashi geri kicks less than optimal and in carrying out athlete training less optimal due to the absence of special monitoring from the dojo coach. According to (Nurkadri, 2017) Exercise planning is something very important that must be done by a coach. (Oktasari et al., 2018) The physical condition training required by a karate champion is adjusted to the biomotor components in karate, namely strength, endurance, speed, power, flexibility, and coordination. The physical condition training program requires a long time for muscle physiology and psychology to meet the demands of the task is one of the reasons why these exercises did not contribute to

the results of mawashi geri kicks on male athletes of the dojo kodim 0212 TS kota padangsidimpuan.

Achieving a good physical component of flexibility turns out to have to do exercises with a long period of time to form muscle function in carrying out its duties. Training that was carried out for 8 weeks turned out to be able to shape the flexibility of male athletes so that the results of the post-test data of flexibility training and post-test data of mawashi geri kick results showed a significant contribution between the flexibility training and the results of mawashi geri kicks.

## CONCLUSION

Based on the results of hypothesis testing and discussion of research hasl, researchers take the following implies:

1. There is a significant contribution of flexibility training to the results of mawashi geri kicks in male athletes of the 0212 ts kodim dojo in the city of padangsidimpuan.
2. There was a significant contribution from strenght training to the results of mawashi geri kicks in male athletes of the dojo kodim 0212 TS padangsidimpuan city.
3. There is a significant contribution together between flexibility training and strenght training to the results of mawashi geri kicks in male athletes of the 0212 ts kodim dojo in the city of padangsidimpuan.

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