

The Waist Slam Ability of Athlete on Wrestling Sport

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Abstract: *This study aims at examining whether there is a correlation of arm muscle strength with the waist slam ability and back muscle strength with the waist slam ability of athlete on wrestling sport. The samples of this study were men athlete of about 18 people. The instrument test used to measure the arm muscle strength, back muscle strength, and waist slam ability in the wrestling sport. The researcher tested the arm muscles by push-up technique using strength measurement and tested the strength of the back muscles using back and leg dynamometer. The researcher conducted twice trial test to take the higher scores. This study indicated that there is a significant correlation between arm muscle strength and the waist slam ability, back muscle strength and slam ability, and significant relationship between arm and back muscle strength and waist slam ability. However, this study recommends the athletes to have wish to increase muscle strength and to retain worthy exercise program on muscle strength, and consider the effects of intensity and duration of exercise to avoid the injury.*

Keywords: Slam; wrestling

1. Introduction

Wrestling is a part of martial sports that uses a movement combination of pull, push, lift and rotates that focuses on techniques of slam, rolls and lockdown to reduce enemy's stability and increase the movement of attack in a set. Basic movements are very important and should be trained on an ongoing basis. Thus, technical training is vitally important as well as various physical trainings to support performance when competing. Wrestling is a sport of physical contact between two persons, where one wrestler should be dropped or be able to control their enemy (Petrov, 1993; David and Christensen, 1996; Galster *et al.*, 2001).

One technique in wrestling is a slam technique which is an attack that has value. Slam technique done by lifting followed by knocking down the opponents to the mat. Slam technique are various, such as slam technique of waist, shoulder, and bridge. Performing a slam techniques required several components that must be trained continuously to achieve maximum results. The required components include muscle strength, hand grip and precision.

Muscle strength is very important in a sports (Cissik and Dawes, 2015). Indeed, muscle strength is an essential in wrestling, especially for slam technique. Good muscle strengths create good slam technique and vice versa. Muscle strength used in slam techniques, particularly in the technique of waist slam such as the arm muscle strength, back muscle strength, and leg muscle strength. Arm muscle strength works to attract and encourage stability in order to eliminate opponents in defense. Then, together, arm muscle strength and leg muscle strength pull and lift an opponent. Meanwhile, the strength of the back muscles works to support the opponent's body when lifting and slamming.

Based on the researcher's observation, the athlete's slam ability is still low compared with the ability to roll. However, a wrestling athlete would be easier to get score by mastering the slam technique. Low ability to slam in wrestling is affected by lack of exercise on muscle strength.

Strength is force of a muscle group used to fight or resist loads in maximum time (Haff and Triplett, 2015). This is the basis of researcher to evaluate the contribution of the arm and back muscle against the waist slam ability in wrestling for wrestling athletes in South Sulawesi, Indonesia.

Waist slam style is commonly used in Greco Roman wrestling (David and Christensen, 1996). This type of slam technique utilizes the waist as a pedestal. Performing waist requires a footstool that could set point weight is between two feet. Hence, the body and foothold would be stable strong. Besides, distance to the waist with a floor should be shorter than opponent because the shorter the position the closer to the base makes more stable position. In addition, try to let the opponent easily swayed or shaken because such circumstances makes opponents' body is unstable and easily dropped (Petrov, 1993).

Therefore, the strength as the ability of the neuromuscular is required to overcome a resistance, either from the outside or inside (Bogdanis, 2012). Maximum work of muscle can increase a person's work ability, which in turn will improve the performance of individuals in the sport event. High muscle performance is determined by the strength and muscular endurance. Muscle consists of biceps and triceps muscles. The biceps is located on the front of the arm and the triceps muscle located in the rear, which is three-pronged. If we move a hand to straighten the arm movement, the biceps will work for relaxation while the triceps will work for contraction. If we move the arm to bend, the biceps muscle will be in contraction while the triceps muscle will be in relaxation. The movement of controlled muscles is very fast but quickly tired, and the stimulation flowed through muscle motor nerves. Arm muscle movement is a movement that is realized (at will) so that the arm muscles are also called controlled muscles.

A very large back muscle which is strong and well-trained will have an important role supporting the performance of an athlete (Kenney, Wilmore and Costill, 2015). Lower back flexibility is based on the range of motion obtained on the

lower back muscular. The muscles, tendon-tendon and ligaments tend to maintain or improve its elasticity through stretching activities. The athletes who have flexible muscle would be rarely injured during physical activity; usually, they have a healthy posture and rarely get sick. Back muscles need to be trained to be more powerful to support the body, and not easily wounded. By having strong back muscles, then all daily activities will become easier, as well as exercise.

2. Method

This study uses 'Pearson correlation test' to examine the relationship between independent variables and the dependent variable (Fraenkel and Wallen, 2009; Creswell, 2012). The independent variables in this study are the arm muscle strength and back muscle strength, while the dependent variable is the waist slam ability in the wrestling sport. The number of samples used in this study was 18 people using total sampling technique.

The instrument test used to measure the arm muscle strength, back muscle strength, and waist slam ability in the wrestling sport. The research instruments used in this study is measurement of the strength of the arm muscles used push-up technique. The instrument used to measure the strength of the back muscles is back and leg dynamometer. Tests were performed with twice trial and the used the highest score. Waist slam ability test is one of the movement tests made by slamming opponents as quickly as possible with the correct technique for 30 seconds.

3. Results and Discussion

This section describes three correlations. Firstly, this study examined the correlation between arm muscle strength and the waist slam ability. Secondly, this study investigated the correlation between back muscle strength and slam ability. Ultimately, this study tested the correlation between arm and back muscle strength and waist slam ability. The Table 1 below showed the summary of the three tested correlation in this study.

Table 1: Tabel of Pearson correlation of arm muscle strength, back muscle strength, and waist slam

		Arm Muscle Strength	Back Muscle Strength	Waist Slam
Arm Muscle Strength	Pearson Correlation	1	.505*	.732**
	Sig. (2-tailed)		.033	.001
	N	18	18	18
Back Muscle Strength	Pearson Correlation	.505*	1	.673**
	Sig. (2-tailed)	.033		.002
	N	18	18	18
Waist Slam	Pearson Correlation	.732**	.673**	1
	Sig. (2-tailed)	.001	.002	
	N	18	18	18

3.1 Correlation between arm muscle strength and waist slam ability

Table 1 above showed the score of Pearson correlation coefficient between arm muscle strength and waist slam

ability is 0.732 or >0.5. This score indicated the significant correlation between the arm muscles strength and waist slam ability because the score is above 0.5. This study showed that the stronger the arm muscle strength the stronger the waist slam ability. However, this circumstances require an experienced athletes who have desire to increase muscle strength (Schoenfeld *et al.*, 2015).

3.2 Correlation between back muscle strength and waist slam ability

Table 1 above also indicated the Pearson coefficient correlation between back muscle strength and waist slam ability, which is in 0.673 or >0.5. This study reveals the significant correlation between back muscle strength and waist slam ability due to the score of the correlation is higher than 0.5. This study implies that if wrestling athletes have the good back muscle strength, they would be better in waist slam ability. Indeed, the good score on waist slam ability will improve athlete performance. Therefore, it is vitally important to keep good training program on muscle strength for an athlete performance (Suchomel, Nimphius and Stone, 2016).

3.3 The relationship arm and back muscle strength and the waist slam ability

Examining the relationship between the variables of the arm and back muscle strength and waist slam ability, the researcher analyzed the data by multiple regression analysis. This analysis comprises the parametric statistics using F test. Based on the calculations as shown in the following table 2, this study indicated the significant relationship between arm and back muscle strength and the waist slam ability.

Table 2: Summary of multiple regression score for arm and back muscle strength and waist slam ability

Variabel	R	R ²	F	P _{value}
Arm muscle strength (X ₁) and back muscle strength (X ₂) Waist slam ability (Y)	0.812	0.660	14.540	0.000

Based on statistical calculation results as shown in Table 2 above that the F value calculated at 14.540 and significance value of 0.000 or <0.05 indicated the significant relationship. Thus, From the analysis of data using multiple regression test shows that the value of R is equal to 0.812 and R square (R²) is 0.660. R square is coefficient of determination, which indicated the level of significance is 66%. This implies that, if an athlete has a good arm and back muscle strength would be the significant indication of good waist slam ability in wrestling sport. However, the athlete should consider the effects of intensity and duration of exercise to avoid the injury (Horswill, 1992).

4. Conclusion

This study used the Person correlation to examine the correlation between arm muscle strength and waist slam ability and the correlation between back muscle strength and waist slam ability. This study also used multiple regression analysis to examine the relationship among arm and back muscle strength toward waist slam ability. This study

showed that the stronger the arm muscle strength the stronger the waist slam ability. Besides, this study implies that if wrestling athletes have the good back muscle strength, they would be better in waist slam ability. Ultimately, this study also reveals that if an athlete has a good arm and back muscle strength would be the significant indication of good waist slam ability in wrestling sport. However, this conditions necessitate an skilled athletes who have wish to rise muscle strength (Schoenfeld *et al.*, 2015). Certainly, the good score on waist slam ability will advance athlete appearance. Consequently, it is enormously essential to retain worthy exercise program on muscle strength for an athlete performance (Suchomel, Nimphius and Stone, 2016). However, the athlete should consider the effects of intensity and duration of exercise to avoid the injury (Horswill, 1992).

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