

Leg-Grappling Techniques Arm Strength and Hip-Flexibility of Wrestling Students Athletes

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Abstract: This study is aimed at knowing the contribution of arm strength and hip-flexibility toward the successfulness of leg-grappling technique in wrestling. Descriptive-correlational was used as the method of the study. The sample was PPLP of West Java student athletes in wrestling consisted of 10 men chosen by applying total sampling technique. The instrument used in measuring the arm strength was Push and Pull Hand Dynamometer while Bridge-up Test was used to measure the hip-flexibility. Meanwhile, to measure the result of the leg-grappling, it was the referee's scoring technique in modifying the sparring which was used. In order to know the correlation and determination in each variable, ANOVA was used to analyse the data. The findings showed that first, there was significant difference between flexibility and arm strength toward the foot roll technique. Second, that there was significant correlation between flexibility and leg-grappling technique. Third, that there was significant correlation between arm strength and foot roll technique.

1 INTRODUCTION

Wrestling is one of martial arts sport consisting of pulling technique, pushing, lifting, locking, rolling, suplex, and a combination of pinching (Curby, 2016). Wrestling performance is influenced by some factors; physical condition, technique, strategy, mental condition (I. B., O. K., E. B., B. M., D.G. C., 2011). In wrestling, power is a main priority in which muscle endurance becomes really dominant while matching. It does not mean that flexibility, speed, and vo2max do not also count (Starosta, 2013; Yard and Comstock, 2006) since wrestle level of fitness really influences the ability of freestyle and Greco roman athletes (Mirzaei, Curby, Barbas and Lotfi, 2011) and athlete mental condition determines the successfulness in doing the technique effectively and efficiently (Brewer, 2007).

Training on movement coordination and technique will be really effective if it is given to children at the age of 10-14. It will be such a good treasury for those juniors (Hartmann and Fetz-Hartmann, 2012; Khanbabazadeh, Serajian and Rashidlamir, 2016; The A, 2015). In Rio Olympics

2015, US wrestler athlete had somewhat good physical condition so that tiredness did not exist in the match (Mirzaei, Curby, Barbas and Lotfi, 2013; Starosta, 2013). A mastery in stand position technique was really dominant for US athletes compared to Turkey's so that lots of Turkey wrestlers lose on a match with US athletes (Starosta, 2013). Wrestlers ability depend on their experience, the duration of training, the room temperature, and the athlete's emotion (The A, 2015) also a mastery of technique which mostly become the main factor in this open-skill sport. The total duration in wrestling is dominated by stand position 84% compared to parterre position 72%; however, in the execution, 78%-82% successfulness happen in the parterre position because the wrestler's homeostatic condition has lost which results in having injury (Mirzaei, Curby, Barbas and Lotfi, 2013; Dokmanac, Curby and Petkovic, 2016; Karimi, Keshavarz, Ansari and Etaati 2013; Aak, Arakawa, Yamashita, Arimitsu, Sakae and Shimizu, 2015). A wrestler who intentionally injures his opponent will get a punishment since he has broken the rule and morality value in wrestling (Aak, Arakawa, Yamashita,

Arimitsu, Sakae and Shimizu, 2015; Ruiz-Pérez, Navia, Miñano-Espín, García-Coll and Palomo-Nieto, 2015; Kameas, Albanidis and Barbas, 2016). The use of parterre technique with a high level of successfulness is one strategy applied by the coach in increasing the athlete's achievement so that the possibility in winning the match by having good physical condition and mastery in parterre technique will be achieved (Curby, 2016; Starosta, 2013). One parterre technique is foot roll in which the feet of the opponent are locked by arm pinching and explosive roll does in a 45 degrees of angle (Hartmann and Fetz-Hartmann, 2012). This study is aimed at knowing the contribution of such components which influence the successfulness in doing the leg-grappling technique especially by looking at the hip flexibility and arm strength while doing the pinching.

2 METHOD

The sample of this study was PPLP Jawa Barat (West Java) student athletes of wrestling consisted of 10 men chosen by applying total sampling technique. The instrument which was used to measure the arm strength was Push and Pull Hand Dynamometer, while Bridge-up Test was used to measure the hip-flexibility. Meanwhile, to measure the result of the foot roll, it was the referee's scoring technique in modifying the sparring which was used. The data analysis technique was by using ANOVA in order to know the correlation and determination of each variable. The research design used was pretest and posttest design, the data was obtained by performing initial arm strength measurement with push and pull dynamometer and measuring hip flexibility with bridge-up test. Furthermore, a leg-grappling technique test with referee assessment. After that exercises arm strength and flexibility of the waist for 16 meetings with the number of meetings in a week as much as 3 times. And performed a final test with the same instrument to see increased arm strength and hip flexibility and improved success of the leg-grappling technique.

3 RESULTS AND DISCUSSION

The most dominant component of wrestling sport is power, but without good flexibility the power will not be maximal in the execution of the technique. Measurement of the success component of leg-grappling technique to 10 student athletes (PPLP

West Java) is limited to 2 aspects that are very instrumental in the success of the technique, namely: arm muscle strength and flexibility of waist. The results of the initial and final measurements of these components are described in the following graph:

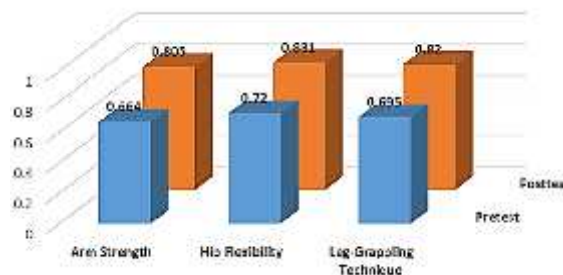


Figure 1 : Comparison result of pretest and posttest of arm strength, hip flexibility and leg-grappling technique.

Based on the graph above can be seen that the results of pretest and posttest after being given treatment of arm muscle strength and flexibility of hip in the success of doing leg-grappling technique to student athletes (PPLP West Java) showed significant results.

The results showed that first, Fcount 23.610 with significance value 0.054 greater than probability value 0.05 it proves that there is significant influence between flexibility of hip and strength of arm to leg-grappling technique. Second, the product moment correlation coefficient between flexibility of hip with leg-grappling technique of 0.051 with p 0.05 indicates that there is a significant correlation between flexibility of hip with leg-grappling technique. Third, product moment correlation coefficient between arm strength with leg-grappling technique of 0.090 with p 0.05 indicates that there is a significant relationship between arm strength and leg-grappling technique. in line with some previous research that in doing all of the power factor wrestling techniques is very influential and significant to determine success and is supported by the flexibility component

Based on the results of research conducted shows there is a positive relationship between flexibility of the hip joint with the results of leg-grappling technique. This is clearly evident when measurements in subject studies that have better flexibility will be able to do a good leg-grappling so as to obtain a perfect value that is 2 point. Because of the leg-grappling of the motion series like as side roll, much of it involves hip flexibility such as twisting, and which is ended with suplex position.

Wrestling is a dominant sport with elements of strength and in this study was clearly visible relationship between arm strength with the results of leg-grappling technique. Because wrestling is a sport

whose physical dominant element is strength, it is no wonder that arm strength contributes to the result of the leg-grappling technique, where the strength of the arm is functional at the time of drawing and mastering the opposing legs, must be strongly held and tightened so that the opponent cannot disengage and turn back, and if the opponent's arm strength is not strong then the opponent can release his leg and the scroll will be declared failed.

Based on the results of measurements and observations in this study, showed the existence of joint connectivity between the flexibility of the hip joint and arm muscle strength with the result of leg-grappling on the wrestling sport. This is evident in research when subjects have good flexibility but are not supported with good strength nor produce good leg-grappling techniques either. Thus, in order to obtain good leg-grappling techniques it is necessary to pay attention to the flexibility of the hip and the strength of the arm because if together can produce a much better movement because in a series of motion it is also seen that the circuit in motion is dominated by the element of flexibility of the hip and arm strength.

4 CONCLUSIONS

In doing leg-grappling technique, arm strength is needed in which this arm strength functions as a lock technique to do the leg-grappling technique and that hip flexibility is also needed to perfectly do the foot roll technique and get maximum score. Based on the findings of the study, it can be concluded that arm strength has significant influence in doing leg-grappling technique, so does hip flexibility has significant influence in doing leg-grappling technique. Thus, arm strength and hip flexibility are really significant in perfectly doing the leg-grappling technique.

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