

An Analysis and Evaluation of the Condition of Superior Sports Arming Power of Athletes in Kebumen

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Abstract: This study aims to analyze and evaluate the quality of the practice result through the test and measurement especially arm power biomotor component in the superior sports event in Kebumen Regency, Central Java. This study refers to the mixing method research design (evaluation research). There is a statistic descriptive analysis of arm power which is known that the average arm power of the research subject is 5.57 meters. The subject lowest power is 2,50 meter, while the maximum arm power reached is 9 meter. The spread of subjects percentage showed that they mostly have an armed power much less around 13 (54,17%), meanwhile the other 11 is (45,83%), it includes the low level. The evaluation of data analysis form shown above is one of the research team recommendations in the practice to increase the arm power by crawling exercises which are usually done in the form of pairs or you could say the term partner-wheelbarrow. The practice frequency is 3 – 4 times a week with practicing 80 – 90% intensity with 4 times repetition with the number of sets of 3 within a 10m x 2 round trip set with a break time of 1: 4 and interval training 4 in a fast exercise rhythm.

1 INTRODUCTION

One of the basic unsure as a sustaining sports performance is a good physical condition. It is when the physical condition is the foundation of the whole coaching training process component unity. Therefore, there is still a lot of coaches who have not realized the important thing of building this basic foundation, they only think about the drilling skill.

It can be imagined that the athletes should be able to manage their good performance while playing, both sports that compete in a relatively very short and long enough time competition time will be very draining of energy. There are a lot of biomotor component aspects that should be considered especially the open – skill sport which needs the ability to move in different directions and in a relatively fast time.

A lot of sports under the supports of the KONI coordination of Kebumen Regency make energies, attention and time. Moreover, it is about finance, facilities, and infrastructure as well as tools and sports facilities. That is why KONI of Kebumen Regency starts to focus by setting the superior sports event which can give medals to Kebumen Regency.

Therefore, in this research, the team tries to participate in analyzing and evaluating the athlete's physical condition under the coordinator of KONI Kebumen Regency, Province of Central Java especially in highlighting the components of the biomotor power arm one of them.

2 THEORY

2.1 Physical Condition Principle

Physical condition is one of the conditions which is very needed in every effort to develop the athlete's achievement, even we can say that it is the basis of the starting point of a sports performance achievement, (Sajoto, 1988: 57). Physical condition is very needed in the football game to support the player's skill.

According to Suharno H.P (1981: 13), the general physical component consists of strength, endurance, speed, agility, and flexibility, while special physical components include explosive power, reaction, stamina, balance, coordination, accuracy, and feeling according to Tjaliek Soegiardo (1992: 79).

2.2 Arm Power Principle

Explosive power is an athlete's ability to overcome obstacles with high strength and contraction speed. This explosive power is needed in some acyclic movements (Harre, 1982:16).

The ability to work muscles (effort) is in units of time (seconds). The quality of power will be reflected from the muscle strength and muscle speed elements in exercising maximum power to overcome resistance. According to Harsono (1988: 200), strength is the ability of muscles to direct maximum strength, in a very fast time. The form of motion of power is explosive, therefore all forms of biomotor power and speed training can be a form of training.

Ismaryati (2009: 59) states that "power consist of strength and speed of dynamic and explosive muscle contraction and also consist of spending maximum muscle strength and as soon as possible". Almost the same with Witarso, quoted by Argubi Silwan (2009: 7) said that: "power or explosive power is the ability of muscles to exercise maximum strength in a fast time. Therefore, the power is a level of physical condition that is higher than that power. Power is a combination of strength and speed".

Therefore, arm muscle power is the muscle skill in the arms area to exercise the maximum strength in the very fast and maximum time.

2.3 Arm Muscle Component

A muscle is one of organ or tools, which allows the body contract. Skeletal muscles are usually linked in two certain places, the strongest place is called origo and the one which can be moved is called insertion. Origo is considered a place in which muscles arise and an insertion is a place where muscles walk.

The last place is the structure which provides the connection which should be moved by that muscle. So the motion is moved by the muscle contraction occurred from insertion to the origo. Hinge is the meeting between two bones, but not all of it allows movements. According to Evelyn C. Pearce (2002: 87), hinge or articulatio is the term used to designate a meeting between two or more skeletal bones. Hinge is categorized into three groups, which are: (a) Fibrosa Hinge or dead joints, (b) Cartilagionous Hinge or joints move slightly, and (c) Synovial hinge or hinge that move freely.

3 ANALYSIS AND EVALUATION PRINCIPLE

3.1 Analysis

According to KBBI (2002: 43), "Analysis is the decomposition of a subject on various parts and a review of the part itself and the relationship between parts to obtain an appropriate meaning and understanding of the overall meaning ". Komaruddin stated (2001: 53) states that "Analysis is a thinking activity to decompose of a whole to become a component so that it can realize the component signs, the relationship between each function in the whole integrated". The conclusion is that the analysis is "the thinking activity to decompose a subject into parts or components so that the characteristics or signs of each part can be known, then the relationship with each other and the functions of each part of the whole.

3.2 Evaluation

Mehren and Lehman, (1987) said that "Evaluation is a process of planning to obtain, and provide information which is very needed to make alternative decisions ". Wayan Nurkencana also says that "Evaluation is an action or a process to decide the value of something". Therefore, it can be concluded that evaluation is a process to assess something related to progress, growth, development in order to achieve educational goals and can be in the form of collecting the evidence and assessing whether the competency has been achieved or not.

4 RESEARCH METHOD

This study refers to the mixed research method (mix method), in which this research method collaborates concepts that are quantitative or qualitative with the research design is evaluative research. This research would produce an output in the form of recommendation formulas from the results of the overall data analysis which also covers the analysis of the overall field study, where the analysis research is the one in which the design starts from theory and ends in fact (Hariwijaya, Triton P.B., 2005: 21).

In accordance with the opinions expressed by Michael, William B and Isaac, Stephen (1984: 1-2) "research and evaluation studies stand or fall recording to how well they measure up to established scientific standards of excellence", namely research that is evaluation studies or record an error as to how

they can measure for the perfection of scientific standard stabilization. Beside, that qualitative evaluative which is a process of understanding based on investigation with a real methodological tradition which then evaluates the results of the analysis of a human or social problem.

5 RESULTS

This research refers to the mixed research, in which the method is collaborating the concept of both quantitative and qualitative, and this research design is evaluative research. It would produce outputs in the form of recommendation formulas from the results of the overall data analysis which also covers the analysis of the overall field study, where the analysis research is research which its design starts from the theory and ends in fact (Hariwijaya, Triton P.B., 2005: 21).

Based on the argument explained by Michael, William B, and Isaac, Stephen (1984: 1 – 2) state that “research and evaluation studies stand or fall recording to how well they measure up to established scientific standards of excellence”. Other than that, the evaluative qualitative is a process of understanding based on the investigation with the real tradition methodology then it evaluates the result of human or social problem analysis.

The arm power data can be gotten from the shocking test. The following is a description of the arm power data of the subjects.

Tabel 1: Arm Power Statistic Data Description.

No	Information	Score (meter)
1.	Average	5,57
2.	Modus	5,00
3.	Deviation Standard	1,88
4.	Minimum	2,50
5.	Maximum	9,00

Based on the arm power statistic descriptive table, it showed that the average of the subject is 5,57 meters. The lowest arm power of the subject is 2,50 meters, while the maximum is 9 meters.

From the research data obtained, it can be seen that the arms power level of the superior athletes in Kebumen Regency, Central Java Province. The following is the distribution of the arm's power level of the subjects.

Table 2: Power Arm Research Subjects Category.

No	Category	Interval (m)	Interval (f)	f (n)	%
1.	Very Good	>14,32 m	>11,49 m	0	0
2.	Good	11,76–14,32 m	10,04–9,34 m	0	0
3.	Fair	10,49–5,39 m	9,34–8,49 m	0	0
4.	Less	10,49–5,93 m	8,49–5,94 m	11	45,83
5.	Very Less	,5,93 m	<5,94 m	13	54,17

Based on the table above, it can be seen that the subjects majority have the very less arm power level in the number of 13 (54.17%) people, while 11 other people (45.83%) were included in the level of less. The following is a histogram of the superior athlete’s arm power category for Kebumen Regency, Central Java province

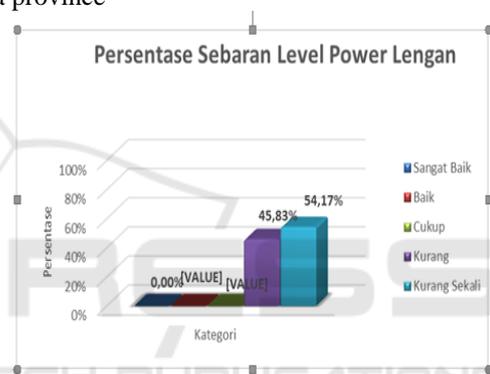


Figure 1: Histogram Percentage of Power Level Distribution of Superior Athletes in in Kebumen Regency, Central Java Province.

6 DISCUSSIONS

Based on the research data description explained in the previous sub-chapter, it can be seen that the athletes’ biomotor in superior sports in Kebumen Regency, Central Java province, especially the arm power components are still in the category of less and very less, so it needs to be improved again to achieve maximum performance. This condition is a portrait of how big the results of training from athletes who are trained. The bad physical conditions that are less than the maximum is influenced by several factors.

The evaluation of some of the biomotor components presented is still limited, so here the research team recommends several training program menus which able to increase the arm power components presented as follows.

One of the way to have the power well is by plyometrics training program. Plyometrics training is a method for increasing explosive power. Plyometric exercises have the unique keys, there are special characteristics namely like the existence of muscle contractions that are very strong so that the response occurs from dynamic loading or rapid strain of the muscles involved.

To have build the arm power quality well for the branch of athlete in Kebumen District of Central Java Province, the research team's recommendations were that in this training to increase the arm power is like the crawling exercises which usually done in the form of pairs or you could say partner-wheelbarrow, medicine ball and clapping push up. The following below describes how to practice it.

6.1 Partner-wheelbarrow Training Program



Figure 2: Partner – wheelbarrow.

This crawling partner exercise is a walking practice with two hands with the feet position held by a friend. That crawling exercises can be done also by yourself by replacing the person holding the legs of the person trying to use a simple tool (hanging the feet on a rope that has been tied). The frequency of exercise is 3 (three) times a week.

Table 3: The example of Increasing Arm Power Training 1.

Intensity	Volume	Repetition	Distance	Recovery	Interval	Rhythm
80– 90%	Set 1	4x	10 m x 2pp	1; 4	4	Fast
	Set 2	4x				
	Set 3	4x				

6.2 Medicine Ball Training Program



Figure 3: Medicine Ball Training.

Medicine ball training is a form of exercise consisting of a series of movements to throw a medicine ball that starts from the back of the head up and upright body, both hands holding the ball behind the head with a fast movement of the ball thrown forward.

Medicine ball can develop arm muscles to get the same stimulation in the form of 2 kg medicine ball weight. This form of exercise stimulates various changes in muscles and increases the ability of muscle groups to respond quickly and strongly (Ishak, 2012).

Table 4: The example of Increasing Arm Power Training 2.

Intensity	Volume	Repetition	Recovery	Interval	Rhythm
80– 90%	3 Sets	8x	1; 4	4	Fast

These frequency of exercise is 3 (three) times a week.

6.3 Clapping Push up Training Program



Figure 4: Clapping Push Up Training.

Clapping push up is a form of weight training which is done by weighting with the addition of clapping movements of the palms when hovering or jumping. Push up exercises are used to develop wrist and hand muscles, elbow muscles (triceps brachii and anconeus), shoulder muscles (anterior deltoid) and chest muscles (pectoralis major and minor) (Hermawan, 1995: 37).

Table 5: The example of Increasing Arm Power Training 3.

Intensity	Volume	Repetition	Recovery	Interval	Rhythm
80–90%	3 Sets	8x	1; 4	4	Fast

The frequency of exercise is 3 (three) times a week.

7 CONCLUSIONS

Based on the result obtained with the data analysis and hypothesis testing and several supported theoretical studies, it can be concluded that: 1) The athlete’s biomotor component in superior sport in Kebumen Regency, Province of Central Java especially the arm power is still in the category of less and very less, so it needs to be increased to reach the maximum achievement. This condition is a portrait of how big the results of training from athletes who are trained; 2) From the record, the evaluation is needed to some biomotor components which still less or even very less, so here, the research team recommends some menus of the training program so it can increase the arm power component, which is crawling exercise, which usually done by partner or partner – wheelbarrow, medicine ball training and clapping push up training.

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