

# The Development of Pencak Silat Physical Training Model for Competitive Athlete

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## ABSTRACT

The purpose of this research is to develop the models of competitive physical training for pencak silat athletes. The development research (research and developmental / R &D) was used to obtain the training physical condition of pencak silat athletes. The respondent of the research were from Pencak Silat Student athletes in Pusat Pendidikan and Student of West Sumatra in 2017. The development of the model under gone five phases which is identifying potential problems, gathering information, product design, design validation, and design improvements. Based on the data analysis three models were design based on situational pencak silat competition are as follows: Model I is a model pola Serang, Model II is a model pola sambut and Model III was Model serang Bela. From these results it can be concluded that practice models pola serang, pola sambut and serang bela would improve the physical condition of pencak silat athletes.

**Keywords:** *Pencak silat, athlete*

## 1. INTRODUCTION

Physical condition is one of the most important aspects of sports in both the game and the martial arts as it is the basis for developing techniques, tactics, and strategies in the game. According to Mochamad Sajoto (1988: 57), physical condition is one of the indispensable requirements in an athlete's performance improvement effort, even as the cornerstone of the starting point of a sporting achievement. According Sugiyanto (1996: 221), physical ability is the ability to function organs in the physical activity. Physical ability is essential to support developing psychomotor activities. A skilled movement can be done if the physical ability is adequate.

Pencak Silat is a traditional martial arts sport of indigenous Indonesian nation that was created to protect themselves from the danger that will threaten the soul and the raganya. seiring the development of modern times pencak silat has begun in pertandingan at national and international events. Pencak Silat is one of the sports that require physical condition in achieving optimal achievement. In pencak silat branch there are 2 number of match that is art number and number of match. Especially on the number of sparring is needed once the element of physical condition to be able to achieve optimal performance. This is because at this number of numbers requires a variety of movements related to the element of physical condition.

In recent years, Indonesia's pencak silat achievement has declined both in regional and international level. As an indication is the failure of pencak silat Indonesia to be the overall champion in Southeast Asia both in the championship that is both invitation and multievent. This is certainly a challenge for Indonesian pencak silat trainers and athletes to re-increase the achievement of pencak silat. Keberhasilan coaching enhancement pencak silat achievement is influenced by various physical components.

Physical components are divided into 2 kinds namely, general physical elements and physical elements khusus. The physical elements needed in martial arts sport are endurance (aerobic, anaerobic), muscle endurance, strength, speed, agility, conformity, balance, precision and coordination, and agility. Physical condition of the pesilat becomes the source of observation material and an athlete's quality improvement in order to meet the standard of physical condition of national and international athletes.

Performance coaching in the sport of pencak silat can be achieved through a programmed, organized and measurable exercise involving various scientific and technological disciplines. In improving the achievement of martial arts sport should be through the exercises done with scientific approach to the related sciences, it can be developed a good training theory, so that sports achievement can be improved well. Pencak silat achievement can not be achieved by speculative, but

must be through intensive training with the correct exercise program. The exercise should certainly be specialized in developing the components needed in martial arts sport.

### **Understanding the Nature of Physical Condition and Biomotor Components of Pencak Silat.**

In terminology physical condition means physical state. These circumstances may include before (initial ability), during and after a latihan process. According to Mochamad Sajoto (1988: 57), physical condition is one of the most indispensable requirements in improving the achievement of athletes, even as the point of departure of a sporting prefix achievement. According to Mochamad Sajoto (1999: 8-9), physical condition is a unified whole of the components that can not be separated just like that, either upgrading or maintenance. This means that in an effort to improve the physical condition of all components must be developed. The state of physical condition can reach the optimum point if it begins the exercise from an early age and is carried out continuously and continuously with references to the basic principles of practice. The state of a person's physical condition is known by means of judgment in the form of a knowledge test. This test can be done in the laboratory or in the field. Although tests conducted in laboratories require expensive tools, they should be done so that the results of the assessment are objective. Physical conditions can reach an optimal point if the exercise starts from an early age and is done continuously.

Physical condition is influenced by many factors, where these factors are complementary. The main factors that influence the physical condition among others: exercise factor, rest factor, healthy life habits, environment and food and nutrition (Nurul 2014) the physical conditions include: aerobic, anaerobic, explosive, muscular endurance, strength, speed, agility, elasticity, balance, precision and coordination, and agility. Which should be trained with the training program according to the scientific method of coaching so that components can be trained efficiently and maximally.

Physical condition is a major factor that an athlete must possess despite leaving no other aspects such as engineering, tactics, and mental aspects. Physical condition of an athlete is different, to be able to have, maintain and improve the physical condition properly, humans must try and also pay attention to the factors that influence it. According Sukirno (1990: 16) quoted by Kusriyani (2004: 13) explained that the factors that affect the physical condition are:

#### *Exercise*

Exercise is a systematic process of repetitive exercise or work with increasing days of work or expense (Harsono, 1986: 27) One of the most important

of exercises, must be done repeatedly and increasing the burden or resistance to increase. The muscle strength and endurance needed for the job. Exercises should be emphasized to physical components such as endurance, strength, speed, agility, flexibility, power (explosive), stamina and other factors important to the overall physical development of the athlete. Similarly, said by J.M. Ballesteros (1979), that the purpose of the exercise is to increase strength, flexibility, mobility and resilience (Junusul Hairy 1989: 67) According to Harsono (1988: 100-101) the main objectives and targets of training or training are to help athletes improve their skills or achievement as much as possible. To achieve that there are four aspects of training that need to be considered and trained carefully by athletes, namely:

#### *Physical Exercise*

The development of a thorough physical condition is very important, because without good conditions the athlete will not be able to follow the exercises perfectly. Some of the physical components that need attention to be developed are cardiovascular endurance, strength power, muscle strength (strength), flexibility, speed, stamina, agility, power. These components are the main ones to be trained and developed by the athlete.

#### *Technical Training (technical training)*

Exercise techniques are exercises to advance the movement techniques needed to perform athletes. Technical training is a specialized exercise to shape and develop motor habits or neuromuscular development. The perfection of the basic techniques of each movement is important because it will determine the overall motion. Therefore, the basic movements of every form of technique required in every sport must be trained and mastered perfectly.

#### *Tactical training*

The purpose of tactical exercises is to cultivate an interpretive or interpretative development of the athlete. Well-trained motion techniques must now be poured and organized into game patterns, game forms and formations and defense strategies and tactics and attacks, thereby evolving into a perfect unity of motion.

#### *Mental Training*

The mental development of athletes is no less important than the development of the three factors above, because, how perfect any physical development, techniques and tactics of athletes, if the mental does not develop, high achievement is unlikely to be achieved. Mental training are exercises that emphasize the development of maturity of the athlete as well as emotional and impulsive development; such as the spirit of competition, unyielding attitude, emotional balance despite being in a stressful situation,

sportsmanship, confidence, honesty and so forth. In sports activities, a person's physical condition will greatly influence even determine the motion of his appearance (Nurul 2014). According Harsono (1988), good physical condition will affect the function and system of body organism, including: There will be an increase in the ability of the circulatory system and heart work; There will be an increase in strength, flexibility, stamina and other physical condition components; There will be a better motion economy in practice; There will be a faster recovery in the organs of the body after exercise; There will be a rapid response from the organism of our body if at any time the response is required. If the above five conditions are less or not achieved after being given a certain physical condition training, then it can be said that the planning, systematic, method, and implementation is less precise.

### **Physical Components on Pencak Silat and How to Train it.**

Physical coaching in pencak silat is an indispensable thing to achieve good physical condition and improve its performance. In practice, pencak silat athletes should be supported with adequate body, but also needed strength and endurance factors and other physical physical components such as: (Saleh moh, 6.19)

#### *Strength*

Strength is a component of a person's physical condition about his ability to use muscles to receive bebandalam running sports activities. These components include the muscles, joints, bones and functional organs in the body. This strength training is very important athletes have the martial arts to menunjaang achievement

#### *Endurance*

Endurance is the ability of the athlete's body to fight its own fatigue factor that occurs when doing the exercise with a long duration what gunaya but not durable

#### *Muscle explosive power*

Muscle explosive power is an important element for a person to be said to have excellent physical ability, because explosive power is needed for daily physical activities that require explosive energy such as jumping, running, hitting, kicking, lifting, throwing and others.

#### *Speed*

Speed is the ability of a person to perform continuous movements in the same form and in the shortest possible time. The velocity varies in two, ie the speed seen from the skeptical side and the speed of the execution of a single movement (Ihsan, 2017) Speed Training method In training speed there are several

biomotor components that are involved or affected, such as strength, power, anaerobic resistance, balance, and agility. Therefore, some speed exercises have the same shape with the latter's biomotor components. In addition, at speed training, the balance and agility components are inseparable entities. That is, during exercise speed will give effect to the component of balance or agility

#### *Flexibility*

Flexibility is the effectiveness of a person in adjustment for all activities with a broad body stretching. Flexibility is determined by the ability of motion of the joints

#### *Agility*

Agility is one's ability to change positions in certain areas. A person capable of changing a different position in high speed and with good coordination, it can be said that his agility is quite good. Agility is very important function to improve the performance of sports. Suharno (1992) states the immediate usefulness of agility is to coordinate multiple movements, facilitate mastery of high technique, produce effective, efficient, and economical movements and to facilitate in adjustment to opponents and the environment

#### *Coordination*

Coordination is the ability of a person to perform a variety of different movements into a single pattern of movement effectively. The coordination biomotor component is indispensable in pencaksilat. Because the basic elements of the technique in pencaksilat involve synchronization of several capabilities, namely: (1) viewing the opposing position, (2) how to set footwork, (3) adjusting the standing position distance with the opposite position, (4) movement arms, and (5) weight removal during attacks or defenses.

#### *Balance*

Balance is the ability of a person to rely on muscle nerve organs, such as in a hand stand or in achieving balance when someone sedag walk then slip. In sports there are many things an athlete should do in balance issues, both in eliminating and maintaining balance

#### *Accuracy*

Accuracy is the ability of a person to control the free movement of a target. This target can be a distance or a direct subject that must be recognized with one part of the body. Can be trained by punching and kicking to a specified target according to the distance of each shot. Dexterity is the speed, intelligence, intelligence and agility of a person in defending and attacking the strong and solit in the defeat. Dexterity in martial arts can be practiced through practice: tiger jumping, rolling, rear front salto, fall (front, back and sides, wheels, kadilan and fallout engineering drills

### Physical Exercise and Training Program

Physical exercise is a systematic rehearsal process that is done repeatedly and the more days the number of burden of training load increases. In the exercise must be done programmed, according to a certain method, scheduled and besutan from the simple to the more complex. Physical exercise aims to improve physical physical condition, physical functional capacity, improve skills and achievements as much as possible. (Herawati Lilik, 27).

Exercise physical condition is one of the most important factors in achieving achievement, such as strength, speed, agility, kelentuk, and so forth. In performing an exercise programmed hruslah in order to achieve the objectives of the latter, the Program is an event that includes the preparation process, while executing and the end / completion of reports useful to support the implementation of the exercise plan. Strictly the exercise program is a direct implementation of an exercise plan to achieve a goal (Suharno, 1986).

Physical exercise method can be distinguished into 2 method: continuous and interval method. Continuous method is the provision of a long training load. The longer the sport is done then the burden of training the longer. dalam continuous training there are 2 kinds of yaiti continuous high intensity and low intensity. High intensity continuous exercise method aims to increase the lactate threshold, while the low-intensity exercise method aims to improve aerobic ability. While the interval training method is the most popular exercise method to improve the quality of the physical condition. This is more prioritizing the giving of rest time, this method aims to improve energy fitness. The principle of the practice training discipline should be throughout the year without attachment, the exercise must be overloaded, interval prism, principle of spesialization, repetition principle, the principle of refinement practice.

#### *Media Video in Exercise and Learning*

According to Cheppy Riyana (2007) media video learning is a medium that presents audio and visual that contains learning messages both contain the concepts, principles, procedures, knowledge application theory to help the understanding of a learning material. Video is a listening (audio visual) learning material that can be used to convey messages / subject matter. It is said to be heard because the hearing elements (audio) and visual / video (visible) elements can be presented simultaneously. Video learning material can be viewed through a VCD player that is connected to a monitor (Sungkono 2003)

## 2. METHOD

This type of research is research development (R & D). Research subjects in this study are athletes Student

Pencak Silat in Pusat Pendidikan dan Latihan Pelajar (PPLP) of West Sumatera, Lecturer Faculty of Sport Science Universitas Negeri Padang, and experts of martial arts. Research subjects in question is the subject of research for trial feasibility model. Steps to Develop a Model of Exercise Physical Condition of Pencak Silat through Video The steps are adapted from Borg and Gall's Educational Research book consisting of ten steps. The research stages are as follows (1) Conducting research and gathering information through Focus discusion group, (2) Planning and designing tools, (3) Developing initial product form (4) conducting initial field test (using 6-12 subjects) ) revised the main product. In accordance with the purpose of research, then the analysis technique in this research is done through validity and reliability test instrument. Validity test is done through construct validity test, while reliability test with test and retest test in small and big group.

## 3. RESULT AND DISCUSSION

### Results

The final goal in this research is to design the model of physical condition that suits the needs of Pencak Silat *tanding* category. And therefore, this exercise model is designed based on the physical needs analysis in pencak silat matches. Thus, this physical condition is a requirement of a special physical condition in accordance with the process of motion that occurs during the game. Based on the input from the experts, the researchers and the team perform the design of physical exercise model of Pencak Silat. Based on the discussion of the research team, then got the model of physical exercise condition of martial arts. The designed training model is oriented to match situations and techniques used in the game. This model is a series of technical movements that are used in a match. The match situation is: If the opponent is passive, then a fighter will perform a series of attacks (combination of techniques); If the opponent actively do the attack, then the fighter will do the technique first before a new back attack; If the opponent is initially passive and when attacked will do the reply, then the fighter do the first attack, then do the defense and then do the attack again.

Effective movement sequences and frequent perpetrators of 3 or 4 movements. Then this designed exercise model consists of 3 and 4 series of movements.

Model 1: Consisting of a combination of foot and hand attacks. Examples of the series of motion: sickle kick, punch, straight kick and side kick.

Model 2: a series that begins with a beli and is followed by a series of attacks. Examples of the series of motion: shadow, blow, sickle kick and straight kick.

Model 3: The series begins with a kick, then dodge, then perform another attack. Examples of the

series of motion: sickle kick, evasion, sickle kick and kick straight / side.

Implementation of each model of this exercise should follow the provisions: The exercise is done in pairs, where one person holds paching to be kicked / hit athletes; Each series of athletes is done in high tempo (fast); This series of motion is done for two minutes (1 set); Rest between sets for 1 - 3 minutes; Exercise is done 4-6 sets every training session

#### 4. CONCLUSIONS

Based on the validity test of experts related to the model of the exercise developed it can be concluded several things as follows: (1) Model can be used with some improvements. Both in terms of the intensity of loading, repetition and form of movement. (2) In terms of the type of movement implemented on each model should be more varied and tailored to the actual match conditions. (3) Model of physical condition training developed consisted of 3 model exercises as follows:

1. Model 1: Consisting of a combination of foot and hand attacks. Examples of the series of motion: sickle kick, punch, straight kick and side kick.
2. Model 2: a series that begins with a beli and is followed by a series of attacks. Examples of the series of motion: shadow, blow, sickle kick and straight kick.
3. Model 3: The series begins with a kick, then dodge, then perform another attack. Examples of the series of motion: sickle kick, evasion, sickle kick and kick straight /side.

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