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# The 4<sup>th</sup>

## AND WORKSHOP "Enhancing Sport, Physical Activity, and Health Promotion for a Better Quality of Life"

PROCEEDINGS



Auditorium of Semarang State University (UNNES), Indonesia

Laboratory of "Prof. Soegijono" Sports Science Faculty, Semarang State University IUNNES), Indonesia

# SPORTS SCIENCE FACULTY UNIVERSITAS NEGERI SEMARANG

Hub of Sports and Health Science

# PROCEEDINGS THE 4<sup>th</sup> INTERNATIONAL CONFERENCE ON PHYSICAL EDUCATION, SPORT AND HEALTH (ISMINA) AND WORKSHOP: ENHANCING SPORT, PHYSICAL ACTIVITY, AND HEALTH PROMOTION FOR A BETTER QUALITY OF LIFE

Sports Science Faculty, Universitas Negeri Semarang

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#### PROFILE THE PHYSICAL CONDITION OF JUNIOR WOMEN'S VOLLEYBALL ATHLETES KEDIRI OF 2016

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#### Abstract

The purpose of this research is to determine the extent of the physical condition on the junior women's volleyball athletes of Kediri. With the method used is a survey and test measurements. The research subjects junior women's volleyball athletes Kediri amounting to 12 athletes. The physical condition of this study is the flexibility, speed, agility, coordination, endurance, strength (leg muscle, abdominal muscles and arm muscles), explosive power (leg and arm). The results of the study achieved by junior volleyball athletes Kediri as follows : the physical condition of the flexibility has enough category, to the physical condition of the speed has enough category, to the physical condition endurance (VO2 Max) has poor category, to the physical condition of leg muscle strength has less category, for the physical condition of the abdominal muscle strength has less once category, to the physical condition of limb muscle power have less category, for the physical condition of leg muscle power has good condition, for the physical condition of the arm muscle power have poor category. From the data obtained above, the general physical condition of junior volleyball athletes of Kediri in the less once category.

Keywords: Profile, Physical Condition, Volleyball

#### INTRODUCTION

#### **Background of the Research**

Volleyball the first time was created by William G Morgan, a United States citizen. For the first time, volleyball only entered the ball to the opponent area with rope barrier which used as net to win and defeat the opponent.

In Indonesia, volleyball game was introduced in 1982 by The Dutch who taught in high schools. But it was not too famous in society and almost lost at that time. Then when Japanese came to Indonesia, the volleyball game was reintroduced to society. In the development, volleyball is very popular because has been played by many circles in Indonesia starting from men and women.

In volleyball game, every player should pay attention to physical and technical condition component which needed during the game. The components of technical condition involve flexibility, speed, agility, coordination, endurance, strength, and explosive power which needed to improve the athlete's performance. Moreover, the volleyball basis technique should be mastered by every athlete in order to gain smooth and uncluttered game. As stated by Sadikun and friends (1992:86) who said that to gain good, smooth, and uncluttered game, the players are demanded to master the volleyball basis technique.

It is supported by Bompa (1988:2) who stated that "Physical preparation must be considered as the important element during training in order to reach good performance." In volleyball game, every player should have good physical condition because according to Sajoto (1988:57) the good



physical condition components consist of: 1. Strength, 2. Endurance, 3. Explosive power, 4. Speed, 5. Flexibility, 6. Balance, 7. Coordination, 8. Agility, 9. Speed, 10. Reaction. From the components of physical condition mentioned, volleyball game needs almost the whole components.

Physical condition is one of components which cannot be separated in application or in the improvement. Sajoto (1995:8) said that in every effort to improve physical condition, an athlete should improve the entire components of physical condition. Viewed by physiologist, physical condition is someone's ability which can be detected to what extent someone's ability as supporter in sport activity.

Therefore, before every athlete join in a competition, they are expected to have good preparation for the components needed to confront everything during competition. If an athlete doesn't have good preparation in physical condition, it can be confirmed that she cannot have good performance during competition.

Physical condition training is expected to always pay attention to how to arrange rehearsal program to improve athlete's physical condition because in every improvement of physical condition must consider every component needed in volleyball game. From ten components above, in this research the researcher only focused in 7 components of physical condition which appropriate with the problem of this research for women's volleyball athlete in Kediri 2016 such as flexibility, speed, agility, coordination, endurance, strength, and explosive power. From those components above, it was described more in the important thing to the improvement of athlete's physical condition to be trunk flexibility, speed, agility, hand-eye coordination, general endurance (VO2 Max), leg muscle strength, abdominal muscle strength, arm muscle strength, limb muscle power, and arm muscle power.

Volleyball is a team sports which needs great teamwork and every team member is demanded to have good capability. By the improvement of Individual's capability, the individual's performance will also be improved because a volleyball player is demanded to master the basis technique of volleyball game.

The basis technique of volleyball must be mastered and learned well in order to improve the performance in volleyball game. Because the basis technique takes role in determining whether the team wins or lost during the competition beside physical elements, psychological, and tactics (Suharno, 1984:12). Some basis techniques that must be mastered by every athlete are serving, passing, smash, and block. To support the ability of the basis technique, an athlete is expected to have good physical condition because if an athlete has good physical condition, she can maintain her performance and will not lower her technical ability during the competition.

#### **Research Question**

From the explanation above, the researcher researched about the physical condition profile of junior women's volleyball athletes of Kediri in 2016. Based on the background of the research, identification of the problem, and limitation of the problem, the researchers formulated the research question to be to identify how physical condition profile of junior women's volleyball athletes of Kediri in 2016.

#### The Purpose of the Research

From the result of observation and interview done by the researchers when joined in every volleyball competition, it was found that there are some women's volleyball athletes in Kediri who had less category of physical condition component. Therefore, the researchers had initiative to identify how the physical condition of women's volleyball athlete in Kediri whom will be dispatched to Porprov in 2019.

#### The Significance of the Research

Theoretically, this research was expected to be beneficial for the next researcher as a reference and for the reader as new knowledge related with physical condition. While practically for the government, the writer, coach, and athletes could understand how the athlete's physical condition nowadays in order to have the better improvement in the future.

#### **METHOD**

In this research, the researchers used descriptive method as a technique of collecting data by test and measurement. The subject of the research was women's volleyball athletes in Kediri. The sample of the research was part of population or representation of researched population. Because the population of this research was only 12 athletes, the whole population will be used as the sample. The instrument used of this research was physical condition instrument consisting of: a. trunk flexibility, b. speed, c. agility, d. hand-eye coordination, e. general endurance (VO2 Max), f. leg muscle strength, g. abdominal muscle strength, h. arm muscle strength, i. limb muscle power, j. arm muscle power. This research involved many team members such as KONI (National Sports Committee of Indonesia) of Kediri which used as training place for athletes in Kediri, UN PGRI Kediri as facilitator which facilitated the need of this research, and the lecturer of Penjaskesrek in UN PGRI Kediri whom involved in completing this research.

	Comment	Measurement technique	Category				
No.	Component		Poor	Less	Enough	Good	Very good
1	Trunk flexibility	Sit and Reach	< 13,5	13,6 -15,5	15,6 - 18,0	18,1 - 19,0	>19,1
2	Speed	Run 30 meters	5,87 - 6,30	5,41 -5,86	4,97 - 5,40	4,51 - 4,96	4,06 - 4,50
3	Agility	Shuttle run	<17,40	15,75- 17,39	14,10-15,74	12,43- 14,09	<12,42
4	Hands eyes coordination	Hands eyes coordination	1-4	5-10	11-15	16-20	>20
5	VO 2 Max	MFT	<25	25,0-33,7	33,8-42,5	42,6-51,5	>51,6
6	Leg muscle strength	Leg dynamometer	<81,5	81,6-127,5	127,6-171,5	171,6- 219,5	>219,6
7	Abdominal muscle strength	Sit up 30 seconds	<23	24-30	31-35	36-40	41-49
8	Arm muscle strength	Push up 30 seconds	<21	22-34	35-53	54-69	>70
9	Limb muscle power	Vertical jump	7,62-20,31	20,32- 33,01	33,02-38,00	38,01- 43,17	>43,18
10	Arm muscle power	Ball medicine	0-1,57	1,96-2,75	3,14-4,72	5,11-5,51	>5,90

Table 1. Standard and Physical Condition Components (Fenanlampir and friends, 2015)



To give rating and measurement in every test of physical condition, the researchers imported the score obtained into the standard given to obtain the ranking score and score integrity. The score conversion of physical condition component can be identified into:

Category	Conversion
Very good	5
Good	4
Enough	3
Less	2
Poor	1

From the table, it can be explained that if the result of score in trunk flexibility sample test is over 19.10, the sample can be categorized into very good category (can be seen in table 1). And if that category is imported into the second table, the sample's score will be 5 (can be seen in table 2) and so on.

In determining the whole score result of the sample's physical condition component can be done by a) summing up the conversion score in every component of physical condition, b) then, the result of converted score is summed up and divided with the amount of physical condition component of the sport, c) the total result is imported into score range which can be seen in table 3.

Table 3. Score Range				
Score Range	Category			
> 5.0	Very good			
4.0-4.9	Good			
3.0 - 3.9	Enough			
2.0 - 2.9	Less			
1.0 - 1.9	Poor			

#### The Research Finding

From the data that obtained by the testing result of the 12 women's volleyball athletes as the sample of the research which done by testing technique and measurement, the acumulated data was analyzed by using descriptive analysis calculation. To understand the data processed in this research, the researchers displayed the data description in the table below:

Kediri					
No.	Physical Condition Component	Total	Average	Category	
1	Trunk flexibility	37	3.08	Enough	
2	Speed	40	3.33	Enough	
3	Agility	41	34.17	Enough	
4	Hands-eyes coordination	41	34.17	Enough	
5	VO2 Max	26	2.16	Enough	
6	Leg muscle strength	13	1.08	Poor	
7	Abdoninal muscle strength	14	1.16	Poor	
8	Arm muscle strength	15	1.25	Poor	
9	Limb muscle power	47	3.91	Good	
10	Arm muscle power	24	2.0	Less	
	Total	298	2.48	Less	

Table 4. Final Data of Physical Condition Component from Junior Women's Volleyball Athletes in

#### **RESULT AND DISCUSSION**

Based on the research finding, one of factors which influenced the successfulness of an athlete related with physical condition was how the training factor done. In exercising, the important one was not only the quantity or how long the training done but also the standard of quality which should be considered well by coach or athletes. To reach the good physical condition which appropriate with what is expected needs training continuously because the training portion was not only about the quantity of training but also the quality and continuity.

The result of the research above showed that the circumtance of junior women's volleyball physical condition in Kediri was generally in less category. From the test result of each athletes, Novia Indah R's physical condition for sit and reach 17 cm had less category. For running 30 meters 5.6 second was in less category. For shuttle run 14.12 second was in enough category. For 12 times of hands-eyes coordination was in enough category. For Multi Fitness Test 25.3 was in less category. For leg dynamometer 60 kg was in poor category. For sit up 22 times in 30 second was in poor category. For vertical jump 47 inchies was in very good category. For ball medicine 2.29 meters was in less category.

The test result of Aliyyah Nurul Islamiyah's physical condition for sit and reach 19 cm was in good category. For running 30 meters 5.43 second was in less category. For shuttle run 15.59 second was in enough category. For 14 times of hands-eyes coordination was in enough category. For Multi Fitness Test 34.3 was in enough category. For leg dynamometer 60 kg was in poor category. For sit up 19 times in 30 second was in poor category. For push up 16 times in 30 second was in poor category. For vertical jump 36 inchies was in enough category. For ball medicine 2.45 meters was in poor category.

The test result of Betaria P's physical condition for sit and reach 12 cm was in poor category. For running 30 meters 5.06 second was in enough category. For shuttle run 15.53 second was in enough category. For 11 times of hands-eyes coordination was in enough category. For Multi Fitness Test 27.8 was in less category. For leg dynamometer 53 kg was in poor category. For sit up 21 times in 30 second was in poor category. For push up 11 times in 30 second was in poor category. For vertical jump 36 inchies was in enough category. For ball medicine 1.48 meters was in poor category.

The test result of Desi Fitrina's physical condition for sit and reach 16 cm was in less category. For running 30 meters 5.03 second was in enough category. For shuttle run 14.16 second was in enough category. For 18 times of hands-eyes coordination was in good category. For Multi Fitness Test 34.3 was in enough category. For leg dynamometer 53 kg was in poor category. For sit up 19 times in 30 second was in poor category. For push up 24 times in 30 second was in less category. For vertical jump 43 inchies was in good category. For ball medicine 2.3 meters was in less category.

The test result of Tessa Eka Septa Alvisa's physical condition for sit and reach 19 cm was in good category. For running 30 meters 4.96 second was in good category. For shuttle run 13.29 second was in good category. For 16 times of hands-eyes coordination was in good category. For Multi Fitness Test 28.8 was in less category. For leg dynamometer 63 kg was in poor category. For sit up 15 times in 30 second was in poor category. For push up 23 times in 30 second was in less category. For push up 23 times in 30 second was in less category. For second was in less category.



The test result of Mega Dian Sulistiyowati's physical condition for sit and reach 20 cm was in good category. For running 30 meters 4.96 second was in good category. For shuttle run 14.72 second was in enough category. For 17 times of hands-eyes coordination was in good category. For Multi Fitness Test 30.2 was in less category. For leg dynamometer 65 kg was in poor category. For sit up 24 times in 30 second was in less category. For push up 23 times in 30 second was in less category. For push up 23 times in 30 second was in less category. For shuttle run 14.72 category. For vertical jump 41 inchies was in good category. For ball medicine 2.7 meters was in less category.

The test result of Astrid Dema's physical condition for sit and reach 14 cm was in poor category. For running 30 meters 4.75 second was in good category. For shuttle run 14.06 second was in good category. For 18 times of hands-eyes coordination was in good category. For Multi Fitness Test 30.2 was in less category. For leg dynamometer 74 kg was in poor category. For sit up 23 times in 30 second was in poor category. For push up 16 times in 30 second was in poor category. For vertical jump 44 inchies was in very good category. For ball medicine 2.58 meters was in less category.

The test result of Galuh D.P's physical condition for sit and reach 23 cm was in very good category. For running 30 meters 5.06 second was in enough category. For shuttle run 13.09 second was in good category. For 19 times of hands-eyes coordination was in good category. For Multi Fitness Test 26.3 was in less category. For leg dynamometer 93 kg was in less category. For sit up 24 times in 30 second was in less category. For push up 21 times in 30 second was in less category. For vertical jump 43 inchies was in good category. For ball medicine 2.83 meters was in less category.

The test result of Alvina S.M's physical condition for sit and reach 19 cm was in good category. For running 30 meters 5.34 second was in enough category. For shuttle run 13.88 second was in good category. For 14 times of hands-eyes coordination was in enough category. For Multi Fitness Test 26 was in less category. For leg dynamometer 70 kg was in less category. For sit up 20 times in 30 second was in poor category. For push up 18 times in 30 second was in poor category. For vertical jump 38 inchies was in enough category. For ball medicine 2.21 meters was in less category.

The test result of Dwi Septi H's physical condition for sit and reach 14 cm was in poor category. For running 30 meters 4.93 second was in good category. For shuttle run 13.16 second was in good category. For 14 times of hands-eyes coordination was in enough category. For Multi Fitness Test 26 was in less category. For leg dynamometer 77 kg was in poor category. For sit up 20 times in 30 second was in poor category. For push up 20 times in 30 second was in poor category. For vertical jump 42 inchies was in good category. For ball medicine 2.53 meters was in less category.

The test result of Eva Maulana's physical condition for sit and reach 19 cm was in good category. For running 30 meters 4.78 second was in good category. For shuttle run 14.82 second was in enough category. For 15 times of hands-eyes coordination was in enough category. For Multi Fitness Test 26 was in less category. For leg dynamometer 57 kg was in poor category. For sit up 21 times in 30 second was in poor category. For push up 11 times in 30 second was in less category. For vertical jump 46 inchies was in very good category. For ball medicine 2.38 meters was in less category.

The test result of Vivi Septian's physical condition for sit and reach 27 cm was in very good category. For running 30 meters 4.9 second was in good category. For shuttle run 14.95 second was in enough category. For 13 times of hands-eyes coordination was in enough category. For Multi Fitness Test 25.6 was in less category. For leg dynamometer 58 kg was in poor category. For sit up 22

times in 30 second was in poor category. For push up 19 times in 30 second was in poor category. For vertical jump 43 inchies was in very good category. For ball medicine 2.18 meters was in less category.

From the data explained above, it can be concluded that for the flexibility of physical condition component of junior women's volleyball athletes in Kediri was in enough category. Therefore, athletes are expected to improve the training portion which supports in reaching the maximal flexibility. The training that can be done is maintaining the flexibility by doing static stretch out, dynamic, and PNF.

For the speed component of physical condition, the junior women's volleyball athletes in Kediri were in enough categories. Therefore, the athletes should be able to improve their speed and consider the training program. The examples of speed training that can be applied are interval sprint, acceleration sprint, deceleration, down-hill and up-hill.

For the agility component of physical condition, the junior women's volleyball athletes in Kediri were in enough categories. Therefore, the athletes should be able to improve their agility. The trainings that can be applied are zig-zag, shuttle run, and steeplechase. For the coordination component of physical condition, the junior women's volleyball athletes in Kediri were in enough categories. Therefore, the athletes need to improve the training in order to have good coordination. The trainings that can be applied are throwing drill and ball catching.

For the endurance component of physical condition (VO2 Max), the junior women's volleyball athletes in Kediri were in less categories. Therefore, the athletes need to improve their endurance because this component of physical condition is the basic component which very needed by every athlete to endure the performance during competition. Thus, the athletes should be given good training that aim to the improvement of maximal endurance in every training. The trainings that can be applied are fartlek, interval training, and cross country.

For the strength component of physical condition, the junior women's volleyball athletes in Kediri were in poor categories. Therefore, in every component of strength such as leg strength, abdominal, and arm should be improved to support the good achievement. The training that can be applied for leg strength is squat-thrust. For arm strength are pull up, cining, and dumbbell swing. And for abdominal strength are sit up and back up.

For the physical condition of leg muscle power, the junior women's volleyball athletes in Kediri were in good categories. Therefore, the athletes should maintain their physical condition and have better improvement. For the physical condition of arm muscle power, the junior women's volleyball athletes in Kediri were in enough categories. Therefore, the athletes should be able to improve it by exercising continuously. The training that can be applied are weight training like leg press and lift weight.

The research finding showed that the physical condition of the junior women's volleyball athletes in Kediri needed to be improved in order to gain the good physical condition which appropriate with the determined standard.

#### CONCLUSION AND SUGGESTION

From the research done by the researchers and the data displayed, it can be concluded that: "profile the physical condition of the junior women's volleyball athletes of Kediri in 2016 was in less category."

Thus, the suggestions are:

1. To the coach

The coach is expected to be able to improve the athletes' physical condition by applying training principle and giving weight training as the exercise.

The 4<sup>th</sup>

2. To the athletes

The athletes are expected to be able to improve their physical condition by increasing the training portion in order to maintain the physical condition.

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