



Analysis of Physical Condition in Spartan Kids Athletics Members

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Abstract

This study aims to determine the physical condition of Spartan Kids Athletics members. This research is a quantitative descriptive research with a survey method with TKJI measurement techniques. The population in this study was 18 athletes from *Spartan Kids Athletics*, with details of 10 athletes aged 10-12 years and 8 athletes aged 13-15 years. The sampling technique used is *total sampling*. The instruments in this study were speed (Sprint), arm and shoulder power (pull up), abdominal power (sit up), *leg power* (vertical jump), and endurance (medium distance running). Data analysis uses descriptive percentages. The results of the data calculation obtained the results of the average physical condition of *Spartan Kids Athletics members* aged 10-12 years from 10 people with a value of 16 points and included in the medium category. The results of the data calculation obtained the results of the average physical condition of *Spartan kids athletics members* aged 13-15 years from 8 people with a value of 15.75 points and were included in the medium category. Based on the results of the research and data calculations that have been carried out, it can be concluded that the level of physical condition of *Spartan Kids Athletics* members aged 10-12 years and ages 13-15 years is in the medium category.

Keywords: Physical Condition, Athletics Kids

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INTRODUCTION

Spartan Kids Athletics is a sports club that focuses on athletic development, especially for students in Jambi province. The club was established with the aim of providing a forum for young people who have interests and talents in the field of sports. At the *Spartan Kids Athletics* club, there is no data and tests to find out the level of physical condition of its athletes, so there is no data used as a reference. Therefore, *Spartan Kids Athletics coaches* must record the progress of the athlete's physical condition and inform the athlete about the database about his physical condition. This data can also be used as an aid in the creation of the next training program. It is essential for athletes to maintain good physical condition during their training program. Physical fitness training programs should be well designed and systematic to improve the freshness and ability of the body's systems to function better, so that athletes can achieve a better level of achievement (Indrayana & Yuliawan, 2019).

According to (Ambara, 2017) "in the development of athletes, physical condition factors must be considered to increase the ability of athletes to reach the peak of achievement or *golden age*". The physical condition of a club or athlete is in dire need of data on the level of a person's physical condition to measure how well a person performs in training. This data can be used to measure a person's abilities or to find out a person's physical condition in order to achieve the best level of achievement. Good physical condition is very important to build and improve athletic achievements, including in the age group of children or *athletics kids*. Athletes who are in good physical condition will have an easier time understanding the movement techniques given by their coaches.

Physical condition is the most important component and is the basis for developing techniques, tactics and sports strategies. Physical condition is the most important factor in improving achievement, according to (Saputra dkk., 2023). The development of mental, tactical, strategic, and technique depends on physical conditions. If training starts at an early age, is done regularly throughout the year, is tiered and done correctly, the physical condition of the athlete will be very good. In addition, physical development should be planned regularly. This planning must be based on the stages of training, the physical condition status of the athlete, the sport, nutrition, facilities, equipment, environment, and the health of the athlete (Bafirman & Wahyuni) in (Zanada, 2024).

Better physical condition has many advantages for athletes, such as making it easier and able to learn new skills that are quite difficult, not getting tired easily during training and matches, training programs can be completed without difficulty, recovery time is faster, and can complete quite strenuous exercises. In addition, research shows that physical exercise increases athletes' confidence and reduces the risk of injury. Good and healthy physical condition can help the body optimize its function, especially the performance of muscle tissue when doing physical activities. It also helps the body reduce the amount of substances that cause fatigue. (Novi Yanti, 2023).

(Aryatama, 2021) said that the components of physical condition include endurance, strength, speed, muscle explosiveness, flexibility, coordination, balance, precision, and reaction. According to Nurhasan (2013), the analysis of physical condition for early childhood focuses on the measurement of physical fitness in a comprehensive and sustainable manner. The results of this analysis are very important to create a good physical coaching program to help the child grow well and prevent future health problems. The TKJI measurement series for children aged 10-12 years and 13-15 years consists of five tests, namely, sprint, pull up, vertical jump, and medium distance running.

Speed is a very important physical component. According to (Dawud & Hariyanto, 2022) speed is a person's ability to perform movements in the same way and in a short time, such as when running (sprint). Strength is one of the essential components of physical fitness, and it is essential for different types of exercise, physical activity, and daily activities. Improving overall physical condition is highly dependent on muscle strength (C. Kurniawan & Setijono, 2021). Strength training can be done with different types of activities such as push ups, sit ups, and pull ups. Power or explosive power is a combination of power and speed, if to move a relatively light object, the speed is increased, if the object is heavy, it needs a more dominant force. The muscle explosiveness generated by the leg muscle power has an effect on the transfer of horizontal to vertical momentum. This will be affected by the thrust generated from the change in momentum, since the characteristic of the jump number is that the repulsion movement must be carried out by directing the explosive power of the inner Komari muscle (Kurniawan et al., 2024).

Endurance is a person's ability to carry out movements with the whole body for a relatively long time with a rapid pace without experiencing severe fatigue. According to (Junresti & Murniati, 2021) heart and lung endurance is the ability of the heart, lungs, and blood vessel systems to function optimally during daily activities without experiencing fatigue. Endurance is essential to support muscle work by taking in oxygen and excreting it into active muscles.

Spartan Kids Athletics is a sports club that focuses on athletic development, especially for students in Jambi province. The club was established in 2023 with the aim of providing a forum for young people who have interests and talents in the field of sports. This club is under the auspices of Mhd. Usni Zamzami Hasibuan, S.Pd., M.Pd., a lecturer at the University of Jambi who has extensive experience in the field of sports. Since its establishment, Spartan Kids Athletics has recorded a number of proud achievements.

METHOD

This research is a quantitative descriptive research. This study uses a survey method with data collection techniques using TKJI measurement tests. According to Arikunto (2019), "explaining quantitative research as the name implies, many are required to use numbers, starting from data collection, interpretation of the data, and the appearance of the results". The method used in this study is a survey and data collection method using tests and measurements. This study aims to determine the physical condition of Spartan Kids Athletics members. The type of research used is quantitative descriptive research with TKJI measurement techniques.

The population in this study was 18 athletes from *Spartan Kids Athletics*, with details of 10 athletes aged 10-12 years and 8 athletes aged 13-15 years. The sampling technique used is *total sampling*. There are 5 instruments in this study, namely:

- (1) speed (Sprint), this test is used to measure speed with a distance of 40 meters for children aged 10-12 years and 50 meters for 13-15 years old, the tool used to take time is a stopwatch, results are recorded in seconds.
- (2) arm and shoulder strength (pull up), this test is carried out for 60 seconds, the tool used to take time is the stopwatch.
- (3) abdominal strength (sit up), this test is used to measure abdominal muscle strength with a time of 30 seconds for 10-12 years old and 60 seconds for 13-15 years old, the tool used to take time is a stopwatch, the recorded result is Perfectly performed movements.
- (4) leg power (vertical jump), this test is used to measure leg muscle strength, the tool used is a cm scale board measuring 30cm x 150cm and lime powder, the result recorded is the difference in jump achievement minus upright achievement.
- (5) endurance (medium distance running), this test is used to measure lung, heart and respiratory endurance, with a distance of 600 meters for 10-12 years old and 1000 meters for boys & 800 meters for girls for 13-15 years old, the tool used to take time is a stopwatch, results are recorded in minutes and seconds.

Table 1. TKJI Classification Norms (Nurhasan 2013)

No	Total Values	Klasifikasi
1	22-25	Very good (BS)
2	18-21	Good (B)
3	14-17	Medium (S)
4	10-13	Less (K)
5	05-09	Less Than Once (KS)

RESULTS AND DISCUSSION

RESULT

Physical Condition of Spartan Kids Athletics aged 10-12 years

The frequency distribution of the physical condition of Spartan kids athletics can be seen in the table below:

Table 2. Norms for Assessing the Physical Condition of *Spartan Kids Athletics Members*

Aged 10-12 Years

No	Total Values	Klasifikasi	Frequency	Percentage (%)
1	22-25	Very good (BS)	0	0%
2	18-21	Good (B)	5	50%
3	14-17	Medium (S)	1	10%
4	10-13	Less (K)	4	40%
5	05-09	Less Than Once (KS)	0	0%
Sum			10	100%

Based on the distribution table above, it was obtained in the less than one category with a percentage of 0% (no athletes), the less category with a percentage of 40% as many as 4 athletes, in the medium category with a percentage of 10% as many as 1 athlete, in the good category with a percentage of 50% as many as 5 athletes, and in the very good category with a percentage of 0% (no athletes).

Sprint 40 meter

Based on the test results obtained by sprint 40 meters to measure the speed of spartan kids athletics members can be seen in the following table :

Table 3. Physical Condition Classification of 40 Meters Sprint

Age 10-12 years old		Klasifikasi	Value	Frequency	Percentage
Son	Daughter				
Sd-6.3 sec	SD-6.7 seconds	Very Good (BS)	5	4	40%
6.4-6.9 seconds	6.8-7.5 seconds	Good (B)	4	3	30%
7.0-7.7 seconds	7.6-8.3 seconds	Medium (S)	3	3	30%
7.8-8.8 seconds	8.4-9.6 seconds	Less (K)	2	0	0%
8.9-DST	9.7-DST	Less Than Once (KS)	1	0	0%
sum				10	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 0% (no athletes), the less category with a percentage of 0% (no athletes), in the medium category with a percentage of 30% as many as 3 athletes, in the good category with a percentage of 30% as many as 3 athletes, and in the very good category with a percentage of 40% as many as 4 athletes.

Pull Up

Based on the test results obtained with the pull up test to measure arm and shoulder power of Spartan Kids Athletics members can be seen in the following table:

Table 4. Classification of Physical Conditions of Pull Ups

Age 10-12 years old		Klasifikasi	Value	Frequency	Percentage
Son	Daughter				
46 cm and above	42 cm and above	Very Good (BS)	5	0	0%
38-45 cm	34-41 cm	Good (B)	4	1	10%
31-37 cm	28-33 cm	Medium (S)	3	4	40%
24-30 cm	21-27 cm	Less (K)	2	4	40%
Under 24 cm	Under 23 cm	Less Than Once (KS)	1	1	10%
Sum				10	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 30% as many as 3 athletes, the less category with a percentage of 20% as many as 2 athletes, in the medium category with a percentage of 30% as many as 3 athletes, in the good category with a percentage of 20% as many as 2 athletes, and in the very good category with a percentage of 0% (no athletes).

Sit Up

Based on the test results obtained by the sit up test to measure the abdominal power of spartan kids athletics members, it can be seen in the following table:

Table 5. Classification of Physical Conditions of Sit Ups

Age 10-12 years old		Klasifikasi	Value	Frequency	Percentage
Son	Daughter				
23 times and above	20 times or above	Very Good (BS)	5	2	20%
18-22 times	14-19 times	Good (B)	4	4	40%
12-17	7-13 times	Medium (S)	3	4	40%
4-11 times	2-6 times	Less (K)	2	0	0%
0-3 times	0-1 times	Less Than Once (KS)	1	0	0%
Sum				10	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 0% (no athletes), in the less category with a percentage of 0% (no athletes), in the medium category with a percentage of 40% as many as 4 athletes, in the

good category with a percentage of 40% as many as 4 athletes, and in the very good category with a percentage of 20% as many as 2 athletes.

Vertical Jump

Based on the test results obtained with the *vertical jump test* to measure the leg power of spartan kids athletics members, it can be seen in the following table:

Table 6. Classification of Physical Conditions of Vertical Jump

Age 10-12 years old		Klasifikasi	Value	Frequency	Percentage
Son	Daughter				
46 cm and above	42 cm and above	Very Good (BS)	5	0	0%
38-45 cm	34-41 cm	Good (B)	4	1	10%
31-37 cm	28-33 cm	Medium (S)	3	4	40%
24-30 cm	21-27 cm	Less (K)	2	4	40%
Under 24 cm	Under 23 cm	Less Than Once (KS)	1	1	10%
Sum				10	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 10% as many as 1 athlete, the less category with a percentage of 40% as many as 4 athletes, in the medium category with a percentage of 40% as many as 4 athletes, in the good category with a percentage of 10% as many as 1 athlete, and in the very good category with a percentage of 0% (no athletes).

Running 600 meter

Based on the test results obtained with the 600-meter running test to measure the endurance of Spartan Kids Athletics members, it can be seen in the following table:

Table 7. Physical Condition Classification of 600 Meters

Age 10-12 years old		Klasifikasi	Value	Frequency	Percentage
Son	Daughter				
Sd 2.09	Sd 2.32	Very Good (BS)	5	0	0%
2.10-2.30	2.33-2.54	Good (B)	4	2	20%
2.31-2.45	2.55-3.28	Medium (S)	3	6	60%
2.46-3.44	3.29-4.22	Less (K)	2	1	10%
Under 3.44	Under 4.22	Less Than Once (KS)	1	1	10%
Sum				10	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 10% as many as 1 athlete, in the less category with a percentage of 10% as many as 1 athlete, in the medium category with a percentage of 60% as many as 6 athletes, in the good category with a percentage of 20% as many as 2 athletes, and in the very good category with a percentage of 0% (no athletes).

Physical Condition of Spartan Kids Athletics aged 13-15 years

The frequency distribution of the physical condition of Spartan kids athletics can be seen in the table below:

Table 8. Norms for Assessing the Physical Condition of Spartan Kids Athletics Members

Aged 13-15

No	Total Values	Klasifikasi	Frequency	Percentage
1	22-25	Very good (BS)	1	10%
2	18-21	Good (B)	4	50%
3	14-17	Medium (S)	1	10%
4	10-13	Less (K)	3	30%
5	05-09	Less Than Once (KS)	0	0%
Sum			8	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 0% (no athletes), the less category with a percentage of 30% as many as 3 athletes, in the medium category with a percentage of 10% as many as 1 athlete, in the good category with a percentage of 50% as many as 4 athletes, and in the very good category with a percentage of 0% (no athletes).

Sprint 50 meter

Based on the results of the test obtained by sprint 50 meters to measure the speed of Spartan Kids Athletics members, it can be seen in the following table:

Table 9. Physical Condition Classification of 50 Meter Running

Age 13-15 years old		Klasifikasi	Value	Frequency	percentage
son	daughter				
SD-6.7 seconds	Sd-7.7 seconds	Very Good (BS)	5	2	25%
6.8-7.6 seconds	7.8-8.7 seconds	Good (B)	4	2	25%
7.7-8.7 seconds	8.8-9.9 seconds	Medium (S)	3	2	25%
8.8-10.3 seconds	10.9-11.9 seconds	Less (K)	2	2	25%
10.4-DST	12.0-DST	Less Than Once (KS)	1	0	0%
Sum				8	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 0% (no athletes), the less category with a percentage of 25% as many as 2 athletes, in the medium category with a percentage of 25% as many as 2 athletes, in the good category with a percentage of 25% as many as 2 athletes, and in the very good category with a percentage of 25% as many as 2 athletes.

Pull Up

Based on the test results obtained with the pull up test to measure arm and shoulder power of Spartan Kids Athletics members can be seen in the following table:

Table 10. Classification of Physical Conditions of Pull Ups

Age 13-15 years old		Klasifikasi	Value	Frequency	Percentage
son	daughter				
16 seconds and above	41 seconds and above	Very Good (BS)	5	2	25%
11-15 seconds	22-40 seconds	Good (B)	4	1	10%
06-10 seconds	10-21 seconds	Medium (S)	3	1	10%
02-05 seconds	03-09 seconds	Less (K)	2	3	45%
00-01 sec	00-02 seconds	Less Than Once (KS)	1	1	10%
Sum				8	

Based on the distribution table and graph above, it was obtained in the category of less with a percentage of 10% as many as 1 athlete, the less category with a percentage of 45% as many as 3 athletes, in the medium category with a percentage of 10% as many as 1 athlete, in the good category with a percentage of 10% as many as 1 athlete, and in the very good category with a percentage of 25% as many as 2 athletes.

Sit Up

Based on the test results obtained by the sit up test to measure the abdominal power of spartan kids athletics members, it can be seen in the following table:

Table 11. Classification of Physical Conditions of Sit Ups

Age 13-15 years old		Klasifikasi	Value	Frequency	Percentage
son	daughter				
38 times and above	28 times and above	Very Good (BS)	5	4	50%
28-37 times	19-27 times	Good (B)	4	2	25%
19-27 times	9-18 times	Medium (S)	3	2	25%
8-18 times	3-8 times	Less (K)	2	0	0%
0-7 times	0-2 times	Less Than Once (KS)	1	0	0%
Sum				8	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 0% (no athletes), the less category with a percentage of 0% (no athletes), in the medium category with a percentage of 25% as many as 2 athletes, in the good category with a percentage of 25% as many as 2 athletes, and in the very good category with a percentage of 50% as many as 4 athletes.

Vertical Jump

Based on the test results obtained with the *vertical jump test* to measure the leg power of spartan kids athletics members, it can be seen in the following table:

Table 12. Classification of Physical Conditions of Vertical Jump

Age 13-15 years old		Klasifikasi	Value	Frequency	Percentage
son	daughter				
66 cm and above	50 cm and above	Very Good (BS)	5	0	0%
53-56 cm	39-49 cm	Good (B)	4	0	0%
42-52 cm	30-38 cm	Medium (S)	3	4	50%
31-41 cm	21-29 cm	Less (K)	2	2	25%
Under 31 cm	Under 21 cm	Less Than Once (KS)	1	2	25%
Sum				8	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 10% as many as 1 athlete, the less category with a percentage of 40% as many as 4 athletes, in the medium category with a percentage of 40% as many as 4 athletes, in the good category with a percentage of 10% as many as 1 athlete, and in the very good category with a percentage of 0% (no athletes).

Running 1000 meter men's & 800 meter women's

Based on the test results obtained with the men's 1000 meter and women's 800 meter running test to measure the endurance of spartan kids athletics members can be seen in the following table:

Table 13. Physical Condition Classification of Men's 1000 metres & Women's 800 metres

Age 13-15 years old		Klasifikasi	Value	Frequency	Percentage
son	daughter				
Sd 3.04	Sd 3.08	Very Good (BS)	5	0	0%
3.05-3.53	3.07-3.55	Good (B)	4	3	40%
3.54-4.46	3.56-4.58	Medium (S)	3	2	25%
4.47-6.04	4.59-6.40	Less (K)	2	1	10%
Under 6.04	Under 6.40	Less Than Once (KS)	1	2	25%
Sum				8	100%

Based on the distribution table and graph above, it was obtained in the less than one category with a percentage of 25% as many as 2 athletes, the less category with a percentage of 10% as many as 1 athlete, in the medium category with a percentage of 25% as many as 2 athletes, in the good category with a percentage of 40% as many as 3 athletes, and in the very good category with a percentage of 0% (no athletes).

Discussion

This study aims to look at the physical condition of spartan *kids athletics members*. This study was only conducted on athletes aged 10-12 years and 13-15 years old. Based on the results of the physical condition test on 10-12 year old members of *Spartan Kids Athletics* aged 10-12 years, it can be found that 0% (no athletes) are in the very good category, 50% (5 athletes) are in the good category, 10% (1 athlete) is in the medium category, 40% (4 athletes) are in the poor category, and 0% (no athletes) are in the less than one category. The results showed that members of *Spartan Kids Athletics* aged 10-12 years had an average physical condition test result of 16 points and were included in the moderate category.

Based on the results of the physical condition test on members of *Spartan Kids Athletics* aged 13-15 years totaling 8 people, it can be found that 10% (1 athlete) is in the very good category, 50% (4 athletes) are in the good category, 10% (1 athlete) is in the medium category,

30% (3 athletes) are in the poor category, and 0% (no athletes) are in the less than one category. The results showed that members of *Spartan Kids Athletics* aged 13-15 years had an average physical condition test score of 15.75 points and were included in the moderate category. The physical conditions in this study are speed, shoulder and arm power, abdominal power, leg power, and endurance which are described as follows:

This test aims to measure speed. The results of the speed physical condition test using the 40 m sprint for the age of 10-12 years with a total of 10 athletes were obtained from 4 athletes in the very good category, 3 athletes in the good category, and 3 athletes in the medium category. Meanwhile, the results of the speed physical condition test using 50 m for the age of 13-15 with a total of 8 athletes were obtained from 2 athletes in the very good category, 2 athletes in the good category, 2 athletes in the medium category, and 2 athletes in the low category.

This test aims to measure arm and shoulder power. The results of the speed physical condition test using pull ups for 10-12 years old with a total of 10 athletes were obtained with the results of 1 athlete in the good category, and 4 athletes in the medium category, 4 athletes in the low category, and 1 athlete in the low category. Meanwhile, the results of the speed physical condition test using pull ups for the ages of 13-15 with a total of 8 athletes were obtained from 2 athletes in the very good category, 1 athlete in the good category, 1 athlete in the medium category, and 3 athletes in the low category, and 1 athlete in the low category.

This test aims to measure abdominal power. The results of the speed physical condition test using sit ups for the age of 10-12 years with a total of 10 athletes were obtained from 2 athletes in the very good category, 4 athletes in the good category, and 4 athletes in the medium category. Meanwhile, the results of the speed physical condition test using sit ups for ages 13-15 with a total of 8 athletes were obtained from 4 athletes in the very good category, 2 athletes in the good category, and 2 athletes in the medium category.

This test aims to measure the power of the limbs. The results of the speed physical condition test using vertical jump for the age of 10-12 years with a total of 10 athletes were obtained with the results of 1 athlete in the good category, 4 athletes in the medium category, 4 athletes in the low category, and 1 athlete in the low category. Meanwhile, the results of the speed physical condition test using vertical jump for ages 13-15 with a total of 8 athletes were obtained with the results of 4 athletes in the medium category, 2 athletes in the low category, and 2 athletes in the low category.

This test aims to measure durability. The results of the speed physical condition test using a 600 m array for the age of 10-12 years with a total of 10 athletes were obtained from 2 athletes in the good category, 6 athletes in the medium category, 1 athlete in the low category, and 1 athlete in the less category. Meanwhile, the results of the speed physical condition test using 1000 m pa & 800 m pi for ages 13-15 with a total of 8 athletes were obtained from 3 athletes in the good category, 2 athletes in the medium category, 1 athlete in the low category, and 2 athletes in the less category.

The results of this study show that the physical condition of *Spartan Kids Athletics* members is moderate, therefore the physical condition of each athlete must be trained, improved, and improved again. To maintain good physical condition, well-programmed exercises are required. Therefore, coaches must provide useful physical exercises to improve the physical condition of their athletes.

CONCLUSION

Based on the results of the study, it is known that members of *Spartan Kids Athletic* have the following physical conditions: Members of the spartan kids athletic age 10-12 years have moderate physical condition with an average calculation result of 16 points. Members of the Spartan Kids Athletic age 13-15 years old have moderate physical condition with an average calculation result of 15.75 points. The results of this study show that the physical condition of *Spartan Kids Athletics* members is moderate, therefore the physical condition of each athlete must be trained, improved, and improved again. To maintain good physical condition, well-programmed exercises are required. Therefore, coaches must provide useful physical exercises to improve the physical condition of their athletes.

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