

PROFILE OF PHYSICAL CONDITION OF INDONESIAN INTELLECTUALLY DISABLED BADMINTON ATHLETES DURING THE COVID-19 PANDEMIC

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Original scientific paper

Abstract

In the case of a huge COVID-19 pandemic in several countries, including Indonesia, the urgency of physical profile of intellectually disabled badminton athletes. The purpose of this study is to reveal the physical condition profile of Indonesian junior badminton athletes. Participants in the study were 40 badminton athletes (age = 14-18 years, Male = 31, Female = 9). Research instruments on physical conditions are endurance, strength & conditioning, speed, flexibility, and coordination. Analysis of data with descriptive statistics. The study concluded the profile of the condition of Indonesian junior athletes as follows; 1) Endurance in male athletes falls into the category of "less once", then female athletes then fall into the category "less"; 2) Strength & conditioning in male athletes falls into the category "less once", then athletes fall into the category "less"; 3) Speed in male athletes falls into the category of "less", then in female athletes in the category "less"; 4) Flexibility in male athletes falls into the category of "less", then in female athletes in the category "less"; 5) Coordination in male athletes falls into the category of "less", then in female athletes in the category of "less". Future research is recommended to develop physical profile instruments and exercise programs for blind badminton athletes.

Key words: badminton, COVID-19 Pandemic, intellectual disability, athletes

Introduction

Badminton is a racket sport played by two people (for singles) or two pairs (for doubles). Badminton is played with players on one side aiming to hit the shuttlecock over the net in order to fall on the opponent's designated field of play, and must also try to prevent his opponent from doing so to him (Demirci & Phytanza, 2021; P. Purwanto, Nopembri, et al., 2021; Waddell, 2011). Since February 1, 2006, all parties use the best of three system which each achieved by reaching 21 points on a rally point basis (BWF, 2006; Irawan & Limanto, 2021; S. Purwanto & Burhaein, 2021).

With regard to the program and application of physical badminton training should be designed through the stages (PBSI, 2016): (1) General physical preparation aimed at improving the working ability of the organs, thus facilitating coaching efforts and improving all aspects of training at a later stage, (2) Special physical preparation aimed at improving physical abilities and better movement towards the match. In sports to achieve the achievements desired by a sportsman cannot be separated from what is called physical condition. Good physical condition and ability to compete in achieving the best achievements are not obtained easily and instantly but through

coaching from an early age.

There are four types of completeness that need to be possessed, if one is going to achieve an optimal achievement, the completeness includes physical build-up, technical build-up, mental build-up, and maturity of champions (Bompa & Buzzichelli, 2019; Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Demirci, et al., 2021; Sulistianoro & Setyawan, 2021). In terminology, physical conditions can include before (initial ability), during, and after experiencing a process of exercise. Physical condition is an ability that includes strength, endurance, flexibility, coordination.

The physical condition must be improved so that in playing badminton to be good. Every coach must improve and improve the physical condition of his players (Catur & Mujiriah, 2021; Irawan & Limanto, 2021; Mumpuniarti et al., 2021). If a badminton player will achieve an optimal achievement must have the completeness of physical development, technique, mental, and maturity of the champion. Thus, to achieve an optimal achievement in the world of sports, the four supporting aspects must be done well, in accordance with the sport they pursue. Physical condition will decrease faster than the

increase if not given any exercise at all (Burhaein et al., 2022; Lloyd & Oliver, 2012; Prasetya, 2021).

The importance of the physical condition of athletes should be realized by the coaches as well as the athletes themselves. The coach should always control the physical condition of the athlete, so that it can be known early on if the player experiences interference that will later affect the performance of the player's achievements and performances in the match (Azizah & Sudarto, 2021; Widiyono & Mudiono, 2021; Widodo & Najibuzzamzam, 2021). The development of the world of badminton today has shown a lot of progress, this can be seen from the many organizations or badminton clubs have been formed, both at the internal level of certain countries and international levels at the world level.

Some forms of factors supporting the physical condition of badminton athletes are power, agility, and endurance (Cinhuja et al., 2015; Sutopo & Misno, 2021; Widiyono & Mudiono, 2021). Power is one of the factors supporting physical condition that supports an athlete to achieve. Power is used when performing jump smashes. The higher the achievement when doing a jump smash, the more corner options will be chosen to shoot the shuttlecock. Jump smash is done when the shuttlecock is in an overhead position so that with Jump smash can reach the shuttlecock to be attached to the opponent's area.

Badminton players must also have strong arm muscle strength, because with strong arm muscles, the shuttlecock will get harder and faster to hit the target, so the opponent will be difficult to react. The range and sharpness of jump smash angles can also be done well if supported by height. The determinants of maximum achievement are endogenous factors and exogenous factors (Akbari et al., 2017; Singh, 2011; Widodo & Najibuzzamzam, 2021). Part of the factor's athletes include: body shape, body proportions that are in harmony with the sport that followed, in each sport demands a different weight and body shape.

It is realized that efforts to achieve achievements in sports are complex, because they involve many factors, including internal factors such as: physical and mental athletes and external factors such as: natural environment and equipment (Jannah et al., 2021; Millar et al., 2020; Nanda et al., 2021; Phytanza, Burhaein, Lourenço, et al., 2021). Internal factors stem from the quality of the athlete itself, where qualified athletes mean having talent potential that is in accordance with the demands of the sport and ready to be developed to achieve peak achievement. Experience shows that only talented athletes who are willing to train well can achieve peak performance. Peak achievement is the result of all efforts of the coaching program in a certain period which is a mixture of training processes that are systematically designed, tiered, continuous, repetitive, and increasing.

Sports have their own character and specifications,

so there needs to be a mix of general tests and specialization in conducting selection. The role of the test equipment feels less if not combined with the observations of experienced coaches. According to observations, so far, many clubs have not paid attention to the issue of identifying this physical ability carefully. The recruitment of athletes is still based on natural selection, not based on a system of identifying talent using scientific methods based on science and technology. The training process carried out at the club is far from the real science of coaching. As one example of the evaluation process by means of tests and measurements is still rarely done.

A person's physical condition can be improved only in good, measured, continuous, and programmable exercise. The importance of physical condition, a club and a badminton athlete coaching program requires the existence of a data base or profile of the physical condition of athletes as a barometer of improved achievement in training. The importance of the physical condition of athletes should be realized by coaches and athletes, so that it will be detected early on if the athlete experiences disorders that will later hinder the achievement of achievements or performances of athletes in a match. In addition, test results in the form of athlete data can be used by coaches to direct or inform athletes about the physical condition of athletes and can be used as a tool in designing the next training program.

The main disadvantage of a coach in Indonesia is that it does not always have records of the growth and development of children, so data on anthropometry, health, physical abilities, and mental development of athletes do not exist (Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Lourenço, et al., 2021; Pasaribu & Yudhaprawira, 2020). It is said to be a good and professional coach when it has the preparation of athlete data (Phytanza, Mumpuniarti, Burhaein, et al., 2021; Ulfian, 2019). Thus, from the profile data of athlete achievements owned from an early age, it can be used as a reference for coaches to arrange an exercise program that suits the needs of athletes. So that the coach can easily predict the ability and golden age in the athlete he built.

It is possible that the ability of a coach has not monitored properly about the physical condition of the athlete and there is no data on the physical condition of the athlete. In providing physical condition exercises, pressure should be exerted on the development of the body regularly and carefully by paying attention to the level of athletes. This process must be done patiently. Without preparation, a serious physical condition an athlete will have difficulty in achieving optimal achievements during the games.

Currently badminton athletes around the world are directly and indirectly affected by a virus. This virus is known as coronavirus or COVID-19 (P. Purwanto, Lumintuarso, et al., 2021; Putra et al., 2021)Bur. The

spread of COVID-19 that hit Indonesia and the world has an impact on every aspect of life, including education. The COVID-19 pandemic has had a major impact on all areas of life. The COVID-19 pandemic is certainly very influential in the world of education. Many countries, including Indonesia, have decided to close schools and universities (Burhaein, Ibrahim, et al., 2020; Phytanza, Burhaein, & Pavlovic, 2021).

Badminton athletes with intellectual disabilities are among those affected by the pandemic. Based on observational studies of badminton athletes with intellectual disabilities known problems including 1) Exercise cannot always be done in sports halls; 2) The coach does not always provide direct assistance, and 3) Physical exercise cannot be controlled because the dominant athlete trains at home. There is one interesting problem of badminton athletes with intellectual disabilities related to physical training to support badminton skills. Based on the gap of theoretical problems and conditions in the field about the importance of the physical condition of Indonesian junior badminton athletes, the research question asked is "What is the profile of the physical condition of Indonesian intellectually disabled badminton athletes?"

Methods

Participants

Participants in the study were 40 intellectually disabled badminton athletes consisting of 10 female and 30 male athletes with an average age of 14-18 years. The reason for the selection of junior athletes is because at that age athletes need to develop components of basic physical conditions in the form of strength, speed, and endurance. To support the performance of athletes in the sport of badminton.

Research design

The research method used in this study is descriptive method. The use of this descriptive method to create a description or description that is factual and a measure of the facts carried out in a study that can then be concluded (Fraenkel et al., 2012; Phytanza & Burhaein, 2020). In this study describes the physical condition profile of Indonesian junior badminton athletes.

Materials and Apparatus

The test instrument used is a test instrument that has been standardized and in accordance with the criteria of the All Indonesia Badminton Association (PBSI) to measure physical condition, namely endurance, strength & conditioning, speed, flexibility, and coordination (PBSI, 2016).

Endurance measurements are used to determine the vital capacity of the athlete's lungs or Vo2Max. The instrument or test used is the beep test (PBSI, 2016).

The norm of the endurance test category can be seen in Table 1.

Table 1. Endurance result score category norm using beep test.

Category	Score	
	Male	Female
Very good	>63.50	>54.50
Good	59.30 – 63.49	52.80 – 54.49
Enough	58.80 – 59.29	51.40 – 52.79
Less	57.90 – 58.79	50.80 – 51.39
Very Less	<57.89	<50.79

Source: (PBSI, 2016)

Strength measurements & conditioning are used to determine an athlete's power (PBSI, 2016). The instrument or test used is a medicine ball throw. The norms of the strength & conditioning test category can be seen in Table 2.

Table 2. Norma category of strength & conditioning results score using medicine ball throw.

Category	Distance (meter)	
	Male	Female
Very good	>8.8	>6.0
Good	7.6 – 8.7	4.5 – 5.9
Enough	5.6 – 7.5	3.5 – 4.4
Less	4.6 – 5.5	3.0 – 3.4
Very Less	<4.5	<2.9

Source: (PBSI, 2016)

Speed measurements are used to determine an athlete's speed (PBSI, 2016). The instrument or test used to measure speed is a 30 meters sprint test. The norm of the speed test category can be seen in Table 3.

Table 3. Norm category speed results score using 30 meters sprint test.

Category	Score (seconds)	
	Male	Female
Very good	<4.00	<4.50
Good	4.20 – 4.01	4.60 – 4.51
Enough	4.40 – 4.21	4.70 – 4.61
Less	4.60 – 4.41	4.80 – 4.71
Very Less	>4.61	<4.81

Source: (PBSI, 2016)

Flexibility measurements are used to determine the level of flexibility of an athlete's body (PBSI, 2016). The instrument or test used is sit and reach. The norms of the flexibility test category can be seen in Table 4.

Table 4. Norma category score results flexibility using sit and reach.

Category	Score (cm)
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	Male	Female
Very good	>27	>30
Good	17 – 27.9	21 – 30.9
Enough	6 – 16.9	11 – 20.9
Less	0 – 5.9	1 – 10.9
Very Less	<0	<0.9

Source: (PBSI, 2016)

Coordination measurements are used to determine the level of coordination of an athlete (PBSI, 2016). The instrument or test used is a hexagonal obstacle test. The norms of the coordination test category can be seen in Table 5.

Table 5. Norm coordination result score category using hexagonal obstacle test.

Category	Score (seconds)	
	Male	Female
Very good	<11.2	<12.2
Good	13.3 – 11.3	15.3 – 12.3
Enough	15.5 – 13.4	18.5 – 15.4
Less	17.8 – 15.6	21.8 – 18.6
Very Less	>17.9	>21.9

Source: (PBSI, 2016)

Procedures

Data collection techniques use tests and

Table 6. Descriptive Statistical Results of Physical Profiles of Male Athletes.

Descriptive Statistics	E	S&C	S	F	C
Mean	57.20	4.50	4.65	4.42	17.86
Median	50.80	4.30	4.93	4.20	17.15
Mode	57.25	4.10	4.50	4.50	17.30
Std. Deviation	8.04	1.14	0.95	0.97	1.17
Minimum	42.50	2.00	8.60	4.00	14.16
Maximum	59.20	7.00	4.30	10.00	17.90

Note: E = Endurance; S&C = Strength & Conditioning; S = Speed; F = Flexibility; C = Coordination
Source: Primary Data, 2021

The data obtained is female athletes numbering 10 athletes (n = 10). The descriptive statistical results of female athletes can be seen in table 7.

Table 7. Descriptive Statistical Results of Physical Profiles of Female Athletes.

Descriptive Statistics	E	S&C	S	F	C
Mean	51.20	3.30	4.75	4.52	20.86
Median	48.80	3.10	4.93	4.30	20.15
Mode	47.25	3.25	5.00	4.55	20.80
Std. Deviation	8.84	0.84	0.96	0.97	1.37
Minimum	39.50	1.00	4.70	4.40	26.22
Maximum	52.20	4.20	7.30	10.20	15.06

E = Endurance; S&C = Strength & Conditioning; S = Speed; F = Flexibility; C = Coordination. Source: Primary Data 2021

measurements. Before conducting the test, the subject is expected not to engage in activities that are too tiring, with the aim that at the time of the test get maximum results. The instruments used in this study to measure physical conditions include endurance, strength & conditioning, speed, flexibility, and coordination. Before the athlete tests the athlete is required to warm up first for 10 minutes.

Data Analysis

The data analysis technique used is a descriptive statistical technique. These statistics aim to collect data, present data, and determine values. Furthermore, it can be done as a fix for the problems raised by referring to the standard of physical condition that has been standardized to obtain the status of the physical condition of badminton players.

Results

Descriptive Statistical Data

Descriptive statistical results relating to the physical profile of badminton athletes are outlined based on gender i.e. male and female athletes. Physical profile of male badminton athletes. The data obtained is male athletes numbering 30 athletes (n = 30). The descriptive statistical results of male athletes can be seen in table 6.

Physical Profile of Intellectually Disabled badminton athletes

Physical Profile Of Intellectually Disabled badminton athletes including endurance, strength & conditioning, speed, flexibility, and coordination

1. Endurance

Table 8. Endurance results in male badminton athletes.

Category	Score	Frequency	%
Very good	>63.50	0	0
Good	59.30 – 63.49	0	0
Enough	58.80 – 59.29	5	16.67
Less	57.90 – 58.79	10	33.33
Very Less	<57.89	15	50.00
Total		30	100

Based on the results of endurance (table 8) in male badminton athletes it is seen that the most frequency is the category of "less once" number of 15 athletes (50.00%). Then when viewed from the average of 57.20, it falls into the category of "less at all".

Table 9. Endurance results in female badminton athletes.

Category	Score	Frequency	%
Very good	>54.50	0	0
Good	52.80 – 54.49	0	0
Enough	51.40 – 52.79	1	10
Less	50.80 – 51.39	5	50
Very Less	<50.79	4	40
Total		10	100

Based on the results of endurance (table 9) in female badminton athletes it is seen that the most frequency is the category of "less" number of 5 athletes (50.00%). Then when viewed from the average of 51.20, it falls into the category of "less".

2. Strength & Conditioning

The results of strength & conditioning data of intellectually disabled badminton athletes are various into two genders, namely men and women. The data of men (n = 30) and women (n = 10) is then spelled out into five categories, namely very good, good, enough, less, and less. Results can be seen in tables 10 and 11.

Table 10. Strength & conditioning results in male badminton athletes.

Category	Score	Frequency	%
Very good	>8.8	0	0
Good	7.6 – 8.7	0	0
Enough	5.6 – 7.5	9	30.00

The results of endurance data of badminton athletes with intellectual disabilities are various into two genders, namely men and women. The data of men (n =30) and women (n=10) are spelled out into five categories: very good, good, sufficient, less, and less. Results can be seen in tables 8 and 9.

Less	4.6 – 5.5	8	26.67
Very Less	<4.5	13	43.33
Total		30	100

Based on the results of strength & conditioning (table 10) in male badminton athletes it is seen that the most frequency is the category of "less once" numbering 13 athletes (43.33%). Then when viewed from the average of 4.50, it falls into the category of "less once".

Table 11. Strength & conditioning results in female badminton athletes.

Category	Score	Frequency	%
Very good	>6.0	0	0
Good	4.5 – 5.9	0	0
Enough	3.5 – 4.4	1	10
Less	3.0 – 3.4	6	60
Very Less	<2.9	3	30
Total		10	100

Based on the results of strength & conditioning (table 11) in female badminton athletes it is seen that the most frequency is the category of "less" number 6 athletes (60.00%). Then when viewed from the average of 3.30, it falls into the category of "less".

3. Speed

The results of data on the speed of badminton athletes with intellectual disabilities are various into two genders, namely men and women. The data of men (n = 30) and women (n = 10) is then spelled out into five categories, namely very good, good, enough, less, and less. Results can be seen in tables 12 and 13.

Table 12. Speed results in male badminton athletes.

Category	Score	Frequency	%
Very good	<4.00	0	0
Good	4.20 – 4.01	0	0
Enough	4.40 – 4.21	2	6.67
Less	4.60 – 4.41	23	76.66
Very Less	>4.61	5	16.67
Total		30	100

Based on the results of speed (table 12) in male badminton athletes it is seen that the most frequency is the category of "less" number of 23 athletes (76.66%).

Then when viewed from the average of 4.65, it falls into the category of "less".

Table 13. Speed results in female badminton athletes.

Category	Score	Frequency	%
Very good	<4.50	9	100
Good	4.60 – 4.51	0	0
Enough	4.70 – 4.61	1	10
Less	4.80 – 4.71	8	80
Very Less	<4.81	1	10
Total		10	100

Based on the results of speed (table 13) in female badminton athletes it is seen that the most frequency is the category of "less" number of 8 athletes (80.00%). Then when viewed from the average of 4.75, it falls into the category of "less".

4. Flexibility

The results of flexibility data of badminton athletes with intellectual disabilities are various into two genders, namely men and women. The data of men (n = 30) and women (n = 10) is then spelled out into five categories, namely very good, good, enough, less, and less. Results can be seen in tables 14 and 15.

Table 14. Flexibility outcomes in male badminton athletes.

Category	Score	Frequency	%
Very good	>27	0	0
Good	17 – 27	0	0
Enough	6 – 16	5	16.67
Less	0 – 5	25	83.33
Very Less	<0	0	0
Total		30	100

Based on the results of flexibility (table 14) in male badminton athletes it is seen that the most frequency is the category of "less" number of 25 athletes (83.33%). Then when viewed from the average of 4.42, it falls into the category of "less".

Table 15. Flexibility results in female badminton athletes.

Category	Score	Frequency	%
Very good	>30	0	0
Good	21 – 30	0	0
Enough	11 – 20	3	30
Less	1 – 10	7	70
Very Less	<0.9	0	0
Total		10	100

Based on the results of flexibility (table 15) in female badminton athletes it is seen that the most

frequency is the category of "less" number 7 athletes (55.56%). Then when viewed from the average of 4.52, it falls into the category of "less".

5. Coordination

The results of data coordination of badminton athletes with intellectual disabilities are various into two genders, namely men and women. The data of men (n = 30) and women (n = 10) is then spelled out into five categories, namely very good, good, enough, less, and less. Results can be seen in tables 16 and 17.

Table 16. Coordination results in male badminton athletes.

Category	Score	Frequency	%
Very good	<11.2	0	0
Good	13.3 – 11.3	0	0
Enough	15.5 – 13.4	3	10.00
Less	17.8 – 15.6	22	73.33
Very Less	>17.9	5	16.67
Total		30	100

Based on the results of coordination (table 16) in male badminton athletes it is seen that the most frequency is the category of "less" number of 22 athletes (73.33%). Then when viewed from the average of 17.86, it falls into the category of "less".

Table 17. Coordination results in woman badminton athletes.

Category	Score	Frequency	%
Very good	<12.2	0	0
Good	15.3 – 12.3	0	0
Enough	18.5 – 15.4	1	10
Less	21.8 – 18.6	2	20
Very Less	>21.9	7	70
Total		10	100

Based on the results of coordination (table 17) in female badminton athletes it is seen that the most frequency is the category of "good" number 7 athletes (70%). Then when viewed from the average of 20.86, it falls into the category of "less at all".

Discussion

One of the important aspects in achieving achievements in sports, especially badminton, is physical condition. Badminton as a very heavy sport requires players to display speed, agility, flexibility, endurance and strength above the limits of the athlete's ability (Chen et al., 2015; Krasilshchikov, 2015; Phomsoupha & Laffaye, 2015). Research was conducted on several complex physical conditions, namely endurance, strength and conditioning, speed, flexibility, and coordination (Bompa & Buzzichelli,

2019; Burhaein, Tarigan, et al., 2020). Athletes who have perfect physical condition, mental attitude, courage, intelligence, and technical skills and tactical efficiency will win the game (Burhaein, Phytanza, et al., 2020; Singh, 2011).

Coaching physical conditions in the game of badminton needs to be addressed or developed to achieve encouraging achievements. A common similarity of physical conditions for sports that control the skills and direction of large muscle power is strength and speed. In the present for badminton matches requires careful preparation. The player must be able to read the opponent's strengths, not only in the maturity of his punches but also where his weaknesses are. A badminton player who wants to progress and maintain his achievements, in addition to having to practice techniques, must also practice physicality regularly.

Physical condition is an important requirement that must be owned by a player in improving and developing optimal sports achievement, so that all component factors of his physical condition must be developed and improved according to the needs of each sport. Badminton is a sport that requires overall endurance, in addition to showing characteristics as a physical activity that requires anaerobic ability, if listened to from the aspect of stroke implementation one by one. But the overall series of activities carried out in a game, shows the nature of being the dominant anaerobic-aerobic branch. This characteristic is inferred from the nature of badminton based on the guidance of physical conditions.

This research reveals about how the physical condition profile of Indonesian junior badminton athletes. The condition profile revealed is endurance, strength & conditioning, speed, flexibility, and coordination.

Endurance

Endurance is one of the important components in supporting the physical appearance of athletes, especially junior athletes. Durability is a very important fitness component for badminton. Badminton players cover many places during the game with little rest. Aerobic fitness is not only important for on-field play, but athletes must be fit for long technical training sessions and to recover well between games during extended tournament play.

Previous research conducted on junior athletes explained that aerobic endurance is 37.12 ml/ kg / minute for male athletes and 26.10 ml / kg / minute for female athletes. The average maximum oxygen volume value for male and female athletes in China who participated in the Thomas Cup and All England was 63.4 and 53.3 ml/kg/min (Angga, 2019). Endurance is related to nutritional intake or dietary patterns given. Nutritional status plays an important role in improving athlete performance, health, body composition, and maintaining athlete stamina

(Burhaein, Ibrahim, et al., 2020; Mielgo-ayuso et al., 2015). A study conducted on endurance in athletes mentioned that energy and carbohydrate needs have not been met in some subjects (Baranauskas et al., 2015). Energy, protein and fat intake is important for the body's resilience. Less energy intake causes athletes to quickly experience weakness and increase the risk of injury, protein intake that is met will help muscle formation and repair, and less fat intake can affect the quality of performance that is less than optimal (Saura et al., 2019; WHO, 2020). In addition to nutritional intake, one that can increase and maintain endurance is physical exercise.

Strength & Conditioning

Strength & conditioning involves increased strength and stability, increased mobility, and increased power (Wong et al., 2019). Power is a combination of speed and power; Therefore, strength alone does not lead to improved performance. The athlete program will include explosive power training, and plyometric training. strength & conditioning often takes a progressive approach (Haff, 2010; Wong et al., 2019). For example, a program will start with a high volume, low-intensity regime and proceed to a low-volume regime with high intensity.

Strength is a component of a person's physical condition about his ability to use muscles to receive the burden of work time (Bompa & Buzzichelli, 2019). Arm strength in question is the ability of the arm muscles to contract optimally to an exercise. Players make movements such as jumping forward, backwards, sideways, hitting while jumping, making sudden steps, all these moves require strength with efficient movement quality.

Resistance training should focus on areas actively involved in playing badminton, such as wrists, elbows, shoulders, neck, chest, abdomen, back, thighs, knees, and ankles. Badminton players need to have a variety of fitness skills to be successful. Cardiovascular fitness, flexibility, agility, strength, and strength are desirable traits that can be developed with regular training. Strength training for badminton should be made as specific as possible, and the athlete's program should reflect the demands of the athlete's sport while still leaving enough time and energy for the practice of playing.

Speed

Speed is the ability to perform similar movements in a row in the shortest amount of time or the ability to travel a distance in the shortest amount of time (Bompa & Buzzichelli, 2019). Speed in the game of badminton is very important, especially when making attacking blows (Wong et al., 2019). For example, smash punches during a single match, usually the speed of the player will be seen. With the ability to run fast, it is expected that players will be able to make movements with a short time / short time during the game. Players must move quickly to close every corner of the field while reaching or hitting the shuttlecock. The way to move fast is to train the

speed of the legs or feet.

It is undeniable that badminton requires speed and mobility of movement with *egillitas* usually used to close the field, or to chase shuttlecocks in all directions. Fast movement and followed by a change of direction, both to the front of the right-side net, front of the left side net, right side, left side, back right side, and left.

Movement around the badminton court is very short, so speed of movement exercises should focus on reaction time, acceleration, and agility (change of direction). There are exercises to increase leg speed, such as quick foot ladder exercises. Training should also focus on strength and strength development.

Flexibility

Flexibility is the ability to perform sprinkling in high wiggle room (Bompa & Buzzichelli, 2019). Except by the space of motion of the joints, flexibility is also determined by the elasticity of the muscles and ligaments. Badminton also requires a fairly good quality of flexibility. This for example appears in the taking of a distant ball that requires a step width, so the player must be able to do a 'split' motion.

Badminton players use their flexibility to reach, dive, and rotate to cover all parts of the field (Wong et al., 2019). Flexibility is something that can be improved by regular stretching. Badminton players should stretch before each activity (exercise and competition), plus other stretches, such as Proprioceptive Neuromuscular Facilitation (PNF) and active stretching, to increase the flexibility of certain muscle groups.

If flexibility affects everything we do in our daily lives, athletes can imagine it's very important in badminton. This not only affects actions such as the ability to stretch to reach a shot in a deep lunge, but also the ability to play overhead shots requires flexibility. The speed at which a badminton player moves and changes direction (agility) implies that the athlete needs a high degree of flexibility to deal with these movements as it puts a lot of pressure on the muscles and joints.

Players who are more inflexible will be vulnerable to injury under this pressure. Having a more flexible lower body also affects the athlete's footwork on the field. If the body is flexible, athletes can take bigger steps and therefore fewer steps on the field. This is good for the diagonal range of motion of the field. Flexibility in the upper body is also important. Players manage to transform an athlete's body into all sorts of shapes to play around a head shot. It also contributes to stronger shots through efficient body rotation and arm action through the shoulder and elbow joints.

Coordination

In badminton "coordination" is mostly used to indicate muscle interaction as it moves. Good coordination is required to perform good techniques such as punches and footwork (Wong et al., 2019). Coordination is also a combination of time and place

(Bompa & Buzzichelli, 2019). This kind of coordination ensures that the blow is applied appropriately at the right time and in the right place. Technically coordinated punches must also be done on the field at the right place at the right time to hit kok.

Coordination is also the right positioning at the right moment on the pitch because of tactics. That will allow tactically efficient movement to the kok or punch (Singh, 2011). In fact, coordination is also important when putting kok into the other half of the field. Good coordination then is the right shuttle flight to the right place. Coordination is also needed between partners in a drama. Coordination then is the efficient positioning on the field of both partners and being hit by one of the athletes. When coordination is regular, maintained through contact, it is clear to the athlete where the athlete is on the field and who can take it at the time.

Conclusions

The study concluded the profile of the condition of Indonesian junior athletes as follows; 1) Endurance in male athletes falls into the category of "less once", then female athletes then fall into the category "less"; 2) Strength & conditioning in male athletes falls into the category "less once", then athletes fall into the category "less"; 3) Speed in male athletes falls into the category of "less", then in female athletes in the category "less"; 4) Flexibility in male athletes falls into the category of "less", then in female athletes in the category "less"; 5) Coordination in male athletes falls into the category of "less", then in female athletes in the category of "less".

Suggestions for future research relate to the test instruments used. Strength & conditioning measurements are used to determine the strength endurance, maximum strength, and power of badminton athletes. The instruments or tests used can be more detailed, namely: 1) Strength endurance with sit up tests, push ups, and skipping rope; 2) Maximum strength with test squad and bench press; 3) Power with vertical jump test and medicine ball throw. Badminton speed instruments or tests can use RAST test. Instruments or tests used flexibility can use sit and reach and shoulder flexibility. The instrument or test used to measure coordination can use agility court test with six points court. Future research could develop physical profile instruments and training programs for blind badminton athletes.

Based on research that has been done it can be concluded that the level of physical activity of students with disabilities during the pandemic is mostly in the low category. The type of physical activity that is often done by students with disabilities during the COVID-19 pandemic is sunbathing, walking, jogging, cycling, and physical activity the most is helping parents. This data shows that disabled students are less actively engaged during the COVID-19 pandemic, resulting in a decrease in

the physical activity of disabled students who are at risk of physical health and fitness problems. Based on these findings, the authors provided advice on more in-depth research on adaptive physical education learning for students with disabilities during the COVID-19 pandemic. Research with widespread participants will improve the quality of the findings later.

Acknowledgments

The author would like to thank all those who supported this research.

Conflict of Interests

Researchers said there was no conflict of interest in the study. Researchers said there was no conflict of interest in the study.

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Received: 20 December, 2020

Accepted: 20 December, 2021

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