



## Survey on physical fitness levels of athletes aged 13-15 years old at Satria Mandiri Soccer School, Bojonegoro Regency

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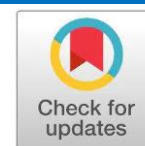
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**Abstract:** Physical fitness is one of the important components in the sport of football, because the game of football is played within 2x45 minutes so that a valid fitness status is needed in order to play football optimally. This study was conducted to determine the status of physical freshness in athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency. The method in this study is descriptive quantitative with survey techniques. The population and samples used were athletes aged 13 to 15 years at the Satria Mandiri football school which totaled 22 athletes. Data collection includes several tests, a 50-meter running test using a running track, a body lift hanging test using poles/bars, a 60-second seating test, an upright jumping test using a board, a 1000-meter running test using a running track. Data analysis in this study is quantitative descriptive statistics. The results of this study obtained that of the 22 athletes who were subjects, 12 athletes obtained the moderate category with a percentage of 54.54%. The conclusion obtained from this study is that the level of physical freshness in athletes aged 13-15 years at the Satria Mandiri football school as a whole shows a moderate category.

**Keywords:** surveys; physical fitness; football.

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### INTRODUCTION

Football is actually just an ordinary game that is done to exercise and maintain the fitness of every human being. The game of football has developed into a game that is most in demand by all people in Indonesia. Football is played by two teams where the two teams are against each other with the aim of scoring goals in order to achieve victory (Alfi et al., 2019). Misbahuddin & Winarno (2020) argues that the time played in a soccer game in each half is 45 minutes long with no more than 15 minutes of rest time. Football is one of the efforts to maintain physical fitness in order to stay in good condition and fit. Football for players is a game as a team so it takes good teamwork and is supported by the abilities of each individual (Adityatama, 2017). Playing soccer can improve the skills that exist in the human body so as to make the psyche of people who play soccer happy and happy (Samsudin et al., 2020). In the game of soccer, physical fitness is needed to support the performance of athletes in achieving achievements. Factors in playing football include physical, technical, tactical, and psychological factors (Bujnovsky et al., 2019).

Physical fitness is related to human activities regarding work and active actions. Physical fitness is an individual's capacity to carry out productive activities without causing excessive fatigue (Joseph, 2018). Physical fitness can be a benchmark for someone to be healthy or unhealthy (Murbawani & Firiana, 2017). Physical fitness is not only needed in sports activities, but also in living daily life. The level of individual



physical fitness can affect the individual's physical readiness to be able to accept the workload received. To become a high-quality and high-achieving soccer athlete, athletes must not only master technical skills, but also must be accompanied by an adequate level of physical fitness so that each athlete can achieve the desired achievement. One way to improve fitness includes a combination of regular exercise and the abilities possessed by an athlete.

Physical fitness can affect a person's condition, be it physically, mentally and mentally so that every day they can accept the workload given (Maisaroh et al., 2020). The purpose of regular exercise is to be able to maintain physical condition so as to improve physical fitness. With good conditions, individuals are in their best performance to achieve achievements. In addition to obtaining achievements, physical fitness can also improve human resources towards a healthy lifestyle (Shofan et al., 2021). Physical fitness is the capacity and ability of the body given to him so that he can make adjustments to conditions and the environment without causing excessive fatigue (Hartanti & Mawarni, 2020). Physical fitness can be in the form of physical activity, games or sports to be able to achieve certain goals (Warni et al., 2021).

To be able to increase the level of physical fitness, several ways that can be done are to regulate your diet regularly, get enough rest, and do sports activities regularly (Rahmawati & Hariyanto, 2020). A healthy condition for a person is a necessity that is very helpful in supporting daily physical activities (Nursena, 2019). Athletes with adequate physical fitness status will be able to carry out training activities well (Abdurrahim & Hariadi, 2018). In order to improve physical condition, athletes can do physical exercise in a programmed and good manner so that it affects the individual and the quality of the team (Sadewa & Nurrochmah, 2020). Adequate physical ability will be able to do the job well suddenly or additionally (Fida & Candra, 2020). Doing physical fitness activities is one way to maintain physical condition (Valentino & Nurrochmah, 2020).

Physical fitness tests in soccer are very important because physical fitness can affect the physical condition of athletes at SSB Satria Mandiri. Physical fitness is one of the supporting components in determining the achievement of an athlete, including in the game of football. Physical exercise programs must be well planned and programmed so that athletes can achieve good and maximum performance (Setiawan & Pamot, 2021). If the achievement of an athlete increases, then the athlete will be able to raise the name of both the region and the country (Rofik et al., 2021). Looking at the characteristics of the game of football, the elements that are required in the physical condition of the game of football include strength, endurance, speed, power, agility and other physical components (Wibowo, 2020).

It can be concluded from the discussion above that some athletes at SSB Satria Mandiri are still lacking in physical fitness. According to the observations of the SSB Satria Mandiri coach, the level of physical fitness of the SSB Satria Mandiri athletes is still lacking. During the training process the coach has never held tests and measurements to find out how big the level of physical fitness in soccer athletes aged 13-15 years at SSB Satria Mandiri, Bojonegoro Regency. So that the coach does not have data on how big the level

of physical fitness in soccer athletes at SSB Satria Mandiri. It is feared that this will affect the athlete's achievement, so that the athlete is not in his best condition. In order to determine the level of physical fitness.

## METHOD

This study was carried out with the aim of knowing the category of physical fitness level in soccer athletes aged 13-15 years at SSB Satria Mandiri, Bojonegoro Regency. The population used is all athletes aged 13-15 years at SSB Satria Mandiri, totaling 22 athletes. This research was conducted on April 11, 2021 at the SSB Satria Mandiri soccer field located on Jl. Youth Development II, Purwosari, Bojonegoro Regency. The test that will be used is the TKJI (Tes Kebugaran Jasmani Indonesia) for the age category 13 to 15 years old which includes several tests, including: 1) a 50 meter run test, 2) a hanging lift test, 3) a 60 second lying down test, 4) a vertical jump test. , 5) 1000 meter run test (Irawan, 2019).

The data collection used is a measurement technique in the form of a test. The stages carried out include: first, making preparations, second, carrying out research, third, making a report on the results. Data analysis used percentage description. To clarify the assessment in the percentage, the test points will be analyzed using a table of values to determine the results of good and bad physical fitness levels, then all points are added up to determine the athlete's physical fitness status. After knowing the physical fitness status of each athlete, the data will be described in the form of percentage results. The data obtained is then processed using the help of the SPSS Statistics 16.0 version application. The formula for determining the percentage:

$$P = \frac{F}{N} \times 100\%$$

Information:

P = Yield Percentage

F = Subject Frequency

N = Number of Subjects

Table 1. Norms for TKJI categories aged 13 to 15 years Boys

| No | Total Value | Classification |
|----|-------------|----------------|
| 1  | 22-25       | Very Good      |
| 2  | 18-21       | Good           |
| 3  | 14-17       | Medium         |
| 4  | 10-13       | Bad            |
| 5  | 5-9         | Very Poor      |

## RESULTS AND DISCUSSION

The test results in this study include several kinds of tests with different units of calculation. This study is a presentation of data obtained from a survey of physical fitness of athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency. In this chapter, we will discuss the mean, standard deviation, median, maximum value, minimum value, mode. The test results that have been obtained will be described in this chapter. By grouping the test results according to several tests carried out, including: a) running 50 meters, b)

hanging up, c) lying down for 60 seconds, d) jumping upright, e) running 1000 meters. So that the data can be analyzed and given an assessment of the score data from the measurement of physical fitness level, then all physical fitness test scores will be calculated. The data results are in the Table 2.

Table 2. Descriptive Statistics of TKJI Results for Age 13-15 Years

| Descriptive Statistics  |    |        |        |         |         |         |
|-------------------------|----|--------|--------|---------|---------|---------|
| Fitness Test            | N  | Mean   | SD     | Minimum | Maximum | Median  |
| Run 50 meters           | 22 | 7.6582 | .59827 | 6.85    | 8.82    | 7.8200a |
| Hang lift body          | 22 | 7.55   | 2,087  | 4       | 12      | 7.38a   |
| Sitting down 60 seconds | 22 | 24.68  | 4.412  | 17      | 32      | 24.50a  |
| Jump straight           | 22 | 44.59  | 3,500  | 39      | 53      | 44.00a  |
| Run 1000 meters         | 22 | 4.1950 | .85888 | 3.22    | 6.08    | 4.1667a |
| Valid                   | 22 |        |        |         |         |         |

In the discussion table above, the overall results of the TKJI test and the results of data analysis on the TKJI test of Russian athletes 13 to 15 years old at the SSB Satria Mandiri school, Bojonegoro Regency are obtained. Can be seen in the following Table 3.

Table 3. Overall Results of TKJI for SSB Satria Mandiri Athletes

| Category  | Score   | F  | Percentage |
|-----------|---------|----|------------|
| Very Good | 22 – 25 | 0  | 0%         |
| Good      | 18 – 21 | 6  | 27.27%     |
| Medium    | 14 – 17 | 12 | 54.54%     |
| Bad       | 10 – 13 | 4  | 18.18%     |
| Very Poor | 5 – 9   | 0  | 0%         |
| Amount    |         | 22 | 100%       |

Based on table 3 recapitulation of the results of the study, it was found that the category of the level of physical fitness of athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency, none of the athletes were in the very good and very poor category, 6 athletes got the good category with a percentage of 27.27%, 12 athletes got the medium category with a percentage of 54.54%, 4 athletes got a bad category with a percentage of 18.18%. It can be concluded that the level of physical fitness of athletes aged 13 to 15 years at SSB Satria Mandiri is in the moderate category.

### 1. 50 Meter Run Test

The results of the 50-meter run test were given to athletes in the 13-15 year age category at the Satri Mandiri soccer school, Bojonegoro Regency, totaling 22 athletes. The overall test results were in the good and medium categories. This proves that speed is one of the most prominent physical components in football. The data results are in the Table 4.

Table 4. Results of the 50 Meter Run Test

| Category  | F  | F%     |
|-----------|----|--------|
| Very Good | 0  | 0%     |
| Good      | 9  | 40.9%  |
| Medium    | 12 | 54.54% |
| Bad       | 1  | 4.54%  |
| Very Poor | 0  | 0%     |
| Amount    | 22 | 100%   |

## 2. Hanging Test Body Lift

The test results were given to athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency, totaling 22 athletes. The overall test results are in the medium category. The data can be seen in the Table 5.

Table 5. Results of the Hanging Lift Test

| Category  | F  | F%     |
|-----------|----|--------|
| Very Good | 0  | 0%     |
| Good      | 2  | 9.09%  |
| Medium    | 14 | 64%    |
| Bad       | 6  | 27.27% |
| Very Poor | 0  | 0%     |
| Amount    | 22 | 100%   |

## 3. 60 Second Lying Sitting Test

The test results were given to athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency, totaling 22 athletes, overall in the good and moderate categories. The data results are in the Table 6.

Table 6. Results of the 60 Second Lying Sitting Test

| Category  | F  | F%     |
|-----------|----|--------|
| Very Good | 0  | 0%     |
| Good      | 10 | 45.45% |
| Medium    | 11 | 50%    |
| Bad       | 1  | 4.54%  |
| Very Poor | 0  | 0%     |
| Amount    | 22 | 100%   |

## 4. Upright Jump Test

The results of the vertical jump test given to soccer athletes aged 13-15 years at SSB Satria Mandiri, Bojonegoro Regency, totaling 22 athletes, were overall in the moderate category. The data results are described in the Table 7.

Table 7. Vertical Jump Test Results

| Category  | F  | F%     |
|-----------|----|--------|
| Very Good | 0  | 0%     |
| Good      | 1  | 4.54%  |
| Medium    | 18 | 81.81% |
| Bad       | 3  | 14%    |
| Very Poor | 0  | 0%     |
| Amount    | 22 | 100%   |

## 5. 1000 Meter Run Test

The test results given to athletes aged 13 to 15 years at SSB Satria Mandiri, Bojonegoro Regency, totaling 22 athletes, the overall test result data were in the medium category. This is very good for supporting athletes in order to maintain their physical condition so that they can complete training and matches well. The test results as explained by the researcher in the Table 8.

Table 8. Results of the 1000 Meter Run Test

| Category  | F  | F%     |
|-----------|----|--------|
| Very Good | 0  | 0%     |
| Good      | 5  | 22.72% |
| Medium    | 10 | 45.45% |
| Bad       | 6  | 27.27% |
| Very Poor | 1  | 4.54%  |
| Amount    | 22 | 100%   |

Physical fitness is the body's capacity to complete daily activities without causing fatigue. Physical fitness can be estimated by carrying out various tests according to the age category of the test taker. According to [Hartanti & Mawarni \(2020\)](#) physical fitness is the actual part of overall fitness, which allows individuals to live a productive life, without causing excessive fatigue so that they are able to perform other productive tasks. Physical fitness is the initial reference in determining the level of the athlete's physical condition.

Physical fitness plays an important role for all athletes. Physical fitness in the game of soccer is very necessary for an athlete to be able to play and practice well. Athletes with a good level of physical fitness will adapt more quickly to the training given to them. Because athletes are trained and prepared to be able to achieve achievements both individually and as a team. So that a good physical fitness status is needed so that athletes can achieve their best conditions in achieving achievements. Without good physical fitness status, athletes will not be able to develop their abilities to achieve the best performance and can hinder the physical activities they will do.

For adolescent athletes, the level of physical fitness of an athlete can be increased from the training process given to him. The role of the coach is also very necessary to train athletes in order to improve their physical fitness. The training method for adolescent athletes will affect the physical condition of the athlete in the future, so that the training method is of special concern to the coach in order to provide training methods that are appropriate to the age group of the students he trains. Physical factors, techniques, tactics are factors that influence the game of football in order to play well ([Samsudin et al., 2020](#)).

In line with the research that has been carried out by [Putra \(2021\)](#) argues that to be able to complete an activity efficiently and effectively, every human being must have an adequate physical fitness status, because the level of adequate physical fitness affects mental health and also affects the achievement to be achieved. [Sani & Hariadi \(2020\)](#) states that physical fitness has advantages for individuals from completing optimal

work. According to [Zulfa & Kurniawan \(2019\)](#) someone with a high level of productivity will have a fit body condition, this can support their learning process.

According to [Anggita et al. \(2019\)](#) physical fitness contributes a lot to student learning achievement, with an effective contribution. Opinion by [Arifandy et al. \(2021\)](#) a person can do physical exercise by involving various components of physical fitness and the correct training method in order to achieve excellent physical fitness. Highly qualified physical fitness will be able to do a reasonable job without reducing its quality and intensity ([Prontenko et al., 2019](#)). Physical fitness is one of the important components in obtaining the productivity of the activities carried out so as to achieve maximum results ([Saputro, 2018](#)).

The more a person does exercise, and the greater the variety of activities carried out, the more fit the body will be ([Sari & Nurrochmah, 2019](#)). Research that has been carried out by [Setia & Winarno \(2021\)](#) concluded that the level of physical fitness of a person can be determined from the quality of the exercise used, the better the quality of the exercise used so as to achieve maximum physical condition. Research conducted by [Yuliana & Sugiharto \(2019\)](#) about the level of physical fitness in athletes aged 14 years at SSB Tugumuda Semarang included in the good category. While the research that has been done by [Shofan et al. \(2021\)](#) Regarding the survey on the physical fitness level of SSB Karlos players, Malang City aged 15 years, it is included in the less category.

Based on the results of tests that have been carried out in this study, the level of physical fitness in athletes aged 13-15 years at the Satria Mandiri soccer school, Bojonegoro Regency as a whole, obtained results with criteria, very good 0 out of 22 athletes or (0%), 6 athletes received good category with percentage (27, 27%), 12 athletes got medium category with percentage (54, 54%), 4 athletes got less category with percentage (18, 18%). Most of the physical fitness of athletes aged 13 to 15 years at SSB Satria Mandiri are in the moderate category.

## CONCLUSION

Based on the results of the physical fitness test for SSB Satria Mandiri athletes aged 13-15 years that had been carried out, 22 athletes were the subject of the study. The data obtained by the physical fitness level of athletes aged 13 to 15 years at the Satria Mandiri soccer school as a whole did not have any test items that scored very good. Therefore, more attention is needed from the coaches at the Satria Mandiri soccer school so that they can improve the physical fitness level of the athletes and the test results are monitored regularly as material for evaluating training programs.

## REFERENCES

- Abdurrahim, F., & Hariadi, I. (2018). Physical Fitness Level of Students at SDN Tulungrejo 03 Highlands, Bumiaji District, Batu City, 2018/2019 Academic Year. *Indonesia Performance Journal*, 2(1), 71. <http://journal2.um.ac.id/index.php/jko/article/view/6697>
- Adityatama, F. (2017). The relationship between leg muscle power, eye-foot coordination and abdominal

- muscle strength with ball shooting accuracy. *CHAMPIONS: Sports Journal*, 2(2), 82–92. <https://doi.org/10.33222/juara.v2i2.37>
- Alfi, MR, Kurniawan, AW, & Amiq, F. (2019). The Effect of Skipping and Zig-Zag Run Exercises on Increasing Agility in Football Games. *Sport Science and Health*, 1(2), 116–125. <http://journal2.um.ac.id/index.php/jfik/article/view/10630>
- Anggita, GM, Ali, MA, & Subiono, HS (2019). The Physical Fitness Levels Analysis of University Students. 5th International Conference on Physical Education, Sport, and Health (ACPES 19), 50–53. <https://doi.org/10.2991/acpes-19.2019.11>
- Arifandy, A., Hariyanto, E., & Wahyudi, U. (2021). Survey of Physical Fitness Level of Junior High School Students. *Sport Science and Health*, 3(5), 218–234. <https://doi.org/10.17977/um062v3i52021p218-234>
- Bujnovsky, D., Maly, T., Ford, KR, Sugimoto, D., Kunzmann, E., Hank, M., & Zahalka, F. (2019). Physical Fitness Characteristics of High-level Youth Football Players: Influence of Playing Position. *Sports*, 7(2), 46. <https://doi.org/10.3390/sports7020046>
- Fida, AF, & Candra, AT (2020). Comparison of Physical Fitness of Students Age 13-15 Years in Coastal Areas and Highlands. *Your SPORT: Journal of Sports Education*, 1(01), 22–32. <https://doi.org/10.32528/sport-mu.v1i01.3053>
- Hartanti, D., & Mawarni, DRM (2020). The Relationship of Fruit and Vegetable Consumption and Sedentary Activity on Physical Fitness in Young Adult Age Groups. *Sport and Nutrition Journal*, 2(1), 1–9. <https://doi.org/10.15294/spnj.v2i1.38073>
- Irawan, R. (2019). Indonesian Test and Measurement Instrument for Deaf-Male Students Aged 13-15 Years-15 Years. *Journal of Physical Education Health and Sport*, 6(2), 54–60. <https://doi.org/10.15294/jpehs.v6i2.22039>
- Maisaroh, P., Athar, A., & Kahri, M. (2020). Analysis of Physical Fitness Components of State Elementary School Students Viewed from Physical Education Facilities and Infrastructure for Class V Age 10-12 Years in Banjarbaru City. *Stability: Journal of Physical Education and Sport*, 1(1), 80–83. <http://103.81.100.242/index.php/mpj/article/view/489>
- Misbahuddin, MH, & Winarno, ME (2020). Study of Basic Technical Skills of Football Players of SSB Unibraw 82 Malang City Age Group 15-16 Years. *Sport Science and Health*, 2(4), 215–223. <http://journal2.um.ac.id/index.php/jfik/article/view/11649>
- Murbawani, EA, & Firiana, L. (2017). The relationship between percent body fat and physical activity with the level of physical fitness of young women. *JNH (Journal of Nutrition and Health)*, 5(2), 69–84. <https://doi.org/10.14710/jnh.5.2.2017.69-84>
- Nursena, F. F. (2019). Survei Tingkat Kebugaran Jasmani Siswa SMP Negeri 1 Loceret dengan Menggunakan Tes Kebugaran Jasmani Indonesia (TKJI). *Jurnal Pendidikan Olahraga dan Kesehatan*, 7(3).
- Prontenko, K., Griban, G., Dovgan, N., Loiko, O., Andreychuk, V., Tkachenko, P., Dzenzeliuk, D., & Bloshchynskyi, I. (2019). Students' Health and Its Interrelation With Physical Fitness Level. *Sport Mont*, 17(3), 41–46. <https://doi.org/10.26773/smj.191018>
- Putra, BF (2021). Survey on Physical Fitness Level of Pelindo III U-13 Soccer School Students in 2021 Surabaya City. *Journal of Sports Health*, 09, 9–16. <https://ejournal.unesa.ac.id/index.php/jurnal-kesehatan-olahraga/article/view/41797>
- Rahmawati, DF, & Hariyanto, E. (2020). Survey of Physical Fitness Level of Participants in State Vocational High School Martial Extracurricular. *Journal of Sport Science and Health*, 2(3), 582–591. <https://doi.org/10.17977/um062v2i122020p582-591>
- Rofik, MK, Yunus, M., & Widiawati, P. (2021). Survey of the Physical Condition of Soccer on Arema



- Football Academy Players Age 16 in Malang City in 2021. *Sport Science and Health*, 3(12), 1032–1041. <https://doi.org/10.17977/um062v3i122021p1032-1041>
- Sadewa, ABD, & Nurrochmah, S. (2020). Survey of Physical Condition of Participants in Junior High School Basketball Extracurricular Activities. *Sport Science and Health*, 2(6), 323–330. <https://doi.org/10.17977/um062v2i62020p323-330>
- Samsudin, N., Ilhami, J., & Hariyanto, E. (2020). Survey on the Level of Basic Technical Skills in Football Academy Players Age Group 17 Years. *Sport Science and Health*, 2(9), 446–455. <https://doi.org/10.17977/um062v2i92020p446-455>
- Sani, ML, & Hariadi, I. (2020). The Physical Fitness Level of Elementary School Students in the Medium Plains Area. *Indonesian Journal of Sport and Physical Education*, 1(3), 79–84. <http://journal2.um.ac.id/index.php/jospe/article/view/14298>
- Saputro, YD (2018). Survey of Physical Fitness Levels in Class VIII Female Students at MTS Surya Buana Malang in the 2017/2018 Academic Year. *Jp. Jok (Journal of Physical Education, Sports And Health)*, 1(2), 92–101. <https://doi.org/10.33503/jpjok.v1i2.170>
- Sari, DA, & Nurrochmah, S. (2019). Survey of Physical Fitness Levels in Junior High Schools. *Sport Science and Health*, 1(2), 132–138. <http://journal2.um.ac.id/index.php/jfik/article/view/10633>
- Setia, DY, & Winarno, ME (2021). Basketball Team Physical Fitness Level Survey. *Sport Science and Health*, 3(3), 107–116. <https://doi.org/10.17977/um062v3i32021p107-116>
- Setiawan, H., & Pamot, H. (2021). Survey of Basic Volleyball Skill Levels and Students' Physical Conditions. *Proceedings of the National Seminar on Physical Education and Health*, 1(1), 178–182. <http://ejournal.fkip.unsri.ac.id/index.php/semnaspemas/article/view/200>
- Shofan, NA, Adi, S., & Raharjo, S. (2021). Survey of Physical Fitness Levels of 15 Year Old SSB Karlos Malang Players. *Journal of Sport Science*, 11(2), 81–85. <https://doi.org/10.17977/um057v11i2p81-85>
- Valentino, AF, & Nurrochmah, S. (2020). Survey on the Physical Condition of Participants in Basketball Extracurricular Activities. *Sport Science and Health*, 2(10), 484–493. <https://doi.org/10.17977/um062v2i102020p484-493>
- Warni, H., Arifin, S., & Arifin, R. (2021). Characteristics and Physical Fitness Levels of Students in Wetlands. *Kinesthetic: Scientific Journal of Physical Education*, 5(3), 620–625. <https://doi.org/10.33369/jk.v5i3.17867>
- Wibowo, RAT (2020). The Relationship Between Muscle Strength, Dynamic Balance and Flexibility with Soccer Passing Accuracy in Male Players Age 14-15 Years Old Club SSB Angkasa Solo in 2019. *Scientific Journal of Spirit*, 20(1), 40–52. <https://doi.org/10.36728/jis.v19i2.953>
- Yuliana, A., & Sugiharto, S. (2019). Test Survey on Physical Fitness Level of SSB Athlete Tugumuda Semarang Age 14. *Journal Of Sport Science And Fitness*, 5(1), 14–18. <https://doi.org/10.15294/jssf.v5i1.39496>
- Yusuf, H. (2018). Evaluation of Physical Fitness Through the Harvard Step Test on 2016/2017 IKIP Budi Utomo Students. *Jp. Jok (Journal of Physical Education, Sports And Health)*, 1(2), 1–13. <https://doi.org/10.33503/jpjok.v1i2.162>
- Zulfa, II, & Kurniawan, AW (2019). Physical Fitness Survey for Class VIII SMP Plus Asy-Syukur Kanigoro. *Sport Science and Health*, 1(3), 184–192. <http://journal2.um.ac.id/index.php/jfik/article/view/11343>