

# Physical Fitness Profile of Universitas Sriwijaya Using Harvard Step Test

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## ABSTRACT

This study aims to look at the physical fitness profile of physical education and health students using the Harvard Step Test. This study uses a qualitative description method. This research was conducted in March 2020. The sample in this study amounted to 120 students consisting of 60 students and 60 female students, with the sampling method, namely purposive sampling. The instrument used in this study was the Harvard step test which was used to find the physical fitness of the research sample. Data processing and analysis are carried out after data collection, starting with the data checking process (editing), data coding, data entry, and data cleaning statistical calculations are carried out descriptively to get the value and percentage of physical fitness. The results showed that the physical fitness level of 11 students (9.17%) was in the very good category, 71 students (59.16%) were in the good category and 38 students (31.67%) were in the moderate category, it can be concluded that Universitas Sriwijaya physical health students are in a good category for a physical fitness profile

**Keywords:** Profiles, Physical fitness, Harvard step test, Sampling method.

## 1. INTRODUCTION

Physical education, sports and health are part of education as a whole. Sports and health physical education has a unique position in education because it develops the psychomotor domain as its main goal, but does not neglect the development of the cognitive and affective domains. In its implementation, physical education has several regulations, several unrelated to safety and some management [1]. Physical education is formally instilling p Science and value through activities that include learning in development and body care, from simple exercises to yoga practice, gymnastics and performances and athletic play [2]. Education in PE is to promote skills competency motor and knowledge growth that can be sustained, if integrated knowledge with physical activity and contribution age the mission of education in school so provide a balanced and consistent approach to educating children [3].

With this peculiarity, it can be used as a solid foundation for children. The solid foundation in question is; "... the development of the potential of students so that they become human beings who believe and obey God Almighty, have noble character, are

healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens", besides that physical education is a the learning process through physical activities designed to improve physical fitness, develop motor skills, knowledge and behavior for healthy and active living, sportsmanship, and emotional intelligence. The learning environment is carefully regulated to enhance the growth and development of all psychomotor, cognitive, and affective domains for each student, physical education in schools is an important part of the academic education system that helps the nation to achieve the goals of the 21st century [4].

It can be said, that physical education provides opportunities for students to be physically active while at school or campus, and develop the level of physical fitness of students and apply knowledge of physical fitness as a guide for carrying out an active lifestyle during spare time at home or, rather, taking time to develop physical activity. All of these goals lead to the goal of delivering successful students in learning to achieve their goals.

The sports education in question is adopting modified sports activities for physical education learning. In addition, during the implementation of an innovative curriculum, physical education teachers, both experienced and beginners, need to learn and practice new pedagogical knowledge to contain changes related to curricular innovation and have the opportunity to refresh their knowledge [5].

To see data on physical fitness levels at both the elementary, middle and tertiary school levels, it is very difficult to find data in general about the level of physical fitness of the Indonesian State, so with the lack of this data, this study focuses on physical fitness in physical fitness students aged 18 and 19 years old.

Physical education and health of the Faculty of Teacher Training and Education of Sriwijaya University in learning or lecturing many practical subjects so that it is very important to have good physical fitness to be able to participate in learning, it is necessary to have research to determine the level of physical fitness. Physical fitness is a person's body's ability to perform daily work effectively and efficiently in a relatively long period of time without causing excessive fatigue, this is intended to increase one's productivity so that a degree of health and physical fitness can be realized as expected. [6] explains that excellent physical fitness will have a positive impact on increasing the ability of blood circulation and heart work, increasing strength, flexibility, endurance, coordination, balance, speed, and body agility, besides that it will have an impact on increasing the ability to move, efficiency and increased ability of the body's organs to recover after exercise and increased the body's responsiveness. Maintenance of physical fitness needs to be carried out continuously, maintenance of physical fitness regularly and directed is part of a developing lifestyle due to the process of education and culture, therefore, the importance of efforts to improve and maintain physical fitness as an integral part of efforts to improve the quality of life of Indonesian people, can carried out through an educational process for all Indonesian people. Education is expected to arise attitudes and awareness of each individual to improve and maintain physical fitness, which in turn becomes a necessity of life. One of the strategies to increase physical fitness can be done through an active and healthy life. Implementation of the right types of activities in an active and healthy life program according to the level of physical fitness.

To find out a person's physical fitness level, there are many ways to find out, such as the Indonesian physical fitness test or TKJI using the 2.4 km run, or the Bleep test, or the multiple stage test and Harvard test. These various types of tests can be used to find a person's physical fitness level. In this study, using a . Slow method The pulse is counted for 3 times (1,2 and 3 minutes) after the test and is counted for 30 seconds.

harvard step test to determine physical fitness. In research [7] the main purpose of the research was to evaluate physical and physiological of junior high school students in Indonesia

This study aims to see the physical fitness profile of students of Physical Health and Health, Faculty of Social and Political Sciences using the Harvard Step Test.

## **2. METHOD**

This study uses a quantitative description method. The sample in this study amounted to 120 students consisting of 60 students and 60 female students, with the sampling method that is purposive sampling. The instrument used in this study was the Harvard step test which was used to find the physical fitness of the research sample. Data processing and analysis are carried out after data collection, starting with the data checking process (editing), data coding, data entry , and data cleaning statistical calculations are carried out descriptively to get the value and percentage of physical fitness he Harvard step test procedure is as follows:

### **2.1. Tools and Materials**

High bench 45.78 cm for men, and 33 cm for women, stop watch, metronome, statescope if necessary. It takes personnel who are able to give examples correctly and be able to count the pulse [8]

### **2.2. Test Implementation**

- a. Participants stand facing Harvard bench in an upright position
- b. Participants are required to go up and down the bench with a rhythm of 120x / minute which is set by the metronome, for 5 minutes.
- c. Participants raise their right foot on the bench after being given the start signal (the stop watch is turned on) then raise their left leg next to their right leg, then lower their right leg followed by their left foot. And so on up and down according to the rhythm of the metronome.
- d. During the test the body must remain upright, and the soles of the feet resting on the bench.
- e. If the participant has not yet reached 5 minutes, the measurement is stopped, (the stop watch is stopped) and the time is recorded.
- f. Immediately after stopping the participants sat down.
- g. After one minute of rest, count the pulse in the first, second and third minutes for 30 seconds each (1-1'30 " , 2-2'30" , and 3-3'30 " ) [8].

The pulse is calculated once in the first minute after the 30 second tes This study used slow assessment by

counting the pulse 3 times in 1,2 and 3 minutes. Based on the Harvard stool fluctuation test, cardiorespiratory

endurance was divided according to five criteria [8].

**Table 1** Physical fitness assessment

Assessment of Physical Fitness	
Test Value	Interpretation
90 – above	Very Good
80 –89	Good
65 –79	Moderate
55 –64	Poor
0–54	Very Poor

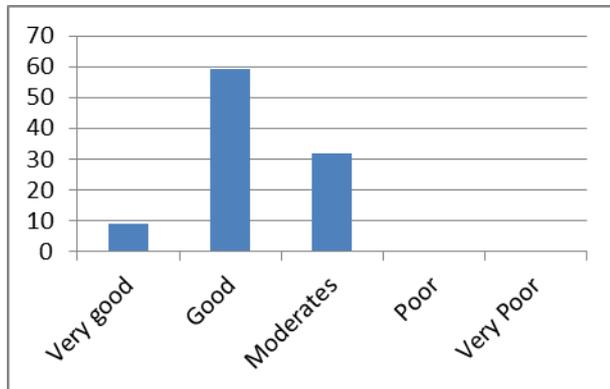
### 3. RESULT AND DISCUSSION

The level of physical fitness was measured using the Harvard step test. This assessment is divided into 5

rankings, namely excellent, good, moderate, poor, very poor.

**Table.2** Physical fitness result

Harvard step test Result			
Test Value	Number of Samples (N)	Percentage (%)	Interpretation
90 - above	11	9,17	Very Good
80 –89	71	59,16	Good
65 –79	38	31,67	Moderate
55 –64	0	0	Poor
0–54	0	0	Very Poor



**Figure 1. Student's Physical Fitness Level**

The results of the calculation of the physical fitness value of physical education students are in Table 2. which illustrates that the physical fitness of 11 students is or (9.17%) is in the very good category, then 71 students or equal to (59.26%) are in the good category. , and 38 students (31.67%) are in the sufficient category. This means that the physical fitness of physical education students is in a good category. The description of the student's physical fitness level above

cannot be separated from the courses in the physical education and health study program of the Faculty of

Teacher Training and Education. According to [9] there are two main principles in physical education, namely prioritizing the participation of all students and forming a habit of life-long active life which means that it is related to physical fitness. So it can be said that an important contribution from physical activity in physical education courses, which have many practical courses, is the achievement of a good level of physical fitness. According to [10] the measurement of physical activity that can improve physical fitness must pay attention to three aspects, namely: frequency of giving physical activity load, duration (duration of giving activity load), and intensity (weight of physical activity load). In accordance with the research results of every woman, [11] there is a positive relationship between physical activity and physical fitness in swimming athletes. physical fitness in taekwondo athletes.

When viewed from the number of practical courses that use a lot of physical activity, this factor greatly impacts the increase in student activity, especially when coupled with the use of time outside lecture hours which is widely used for extra activities such as additional training in accordance with the branch of each student. so this has an impact on the physical fitness of Physical Education students. In accordance with the physical fitness function, efforts to increase the degree of physical fitness of students need to be done so that there

is an increase in the strength, ability, ability, endurance, creativity of students which leads to high workability. [12] physical activity and four components of physical fitness were positively associated with physical and mental function, and [13] found that PF was associated with a better quality of life, with positive associations in all domains, including the aggregated ones. PF has been reported to account for up to 22.5% of the variability in the quality of life scoring of obese individuals with binge eating disorder, [14] found that, although higher PA and PF levels were both associated with better self-reported quality of life, only PF was associated with cognitive function. This differential effect could be attributed to a different impact of aerobic vs. anaerobic exercise on cognitive function. Aerobic fitness has been positively correlated with better high-interference memory in older adults, these findings [15] suggest differential relationships between components of health-related fitness and academic achievement as well as underlying neurocognitive processes, in research [16] can be stated that there is a significant relationship between the Level of Physical Fitness and Academic Learning Outcomes, the other research is [17] a positive and significant relationship between physical fitness and student physical education learning outcomes, The results of the research that have been conducted show significant relationship between physical fitness and student learning outcomes [18], and the other research shows that there is a relationship between physical fitness and physical fitness learning outcomes in [19], [20] a positive and significant relationship between the level of physical fitness and physical health learning outcomes, there is a positive and significant relationship between learning motivation and learning outcomes, and there is a positive and significant contribution between the level of physical fitness and physical fitness learning motivation together. on learning outcomes of Physical Education, There is a significant relationship between the level of physical fitness and the learning outcomes of Physical Education subjects, had relationship between learning motivation and learning outcomes of Physical Education subjects and relationship between the level of physical fitness and learning motivation with learning outcomes in Physical Education subjects curriculum [21]. Future research regarding the effects of multiple aspects of health-related physical fitness on youth's academic achievement and adopting a neuroelectric perspective is warranted. Strategies for improving the quality of life can be carried out by improving physical fitness.

#### 4. CONCLUSION

The conclusion of this study is that it is found that the profile of physical education students on average is in the good category. This is due to the physical activity of physical education students during lectures which is dominated by practical activities and extracurricular activities in the form of routine exercises, and a person's physical fitness level is related to learning outcomes

#### AUTHORS' CONTRIBUTIONS

The author contributes in every activity of preparing proposals, collecting activities, analyzing data, and compiling reports, besides that all authors contribute to research scientific articles from drafting to revision of scientific articles.

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#### REFERENCES

- [1] Martinek, T., & Hellison, D., Youth Leadership in Sport and Physical Education. New York: Palgrave Macmillan, 2019.
- [2] Chandler, T., Cronin, M., & Vamplew, W., Sport and Physical Education: The Key Concepts. Abingdon, UK: Taylor & Francis, 2002, <https://doi.org/10.4324/9780203467145>
- [3] Ennis, C. D., Physical Education Curriculum Priorities: Evidence for Education and Skillfulness. *Quest*, vol. 63, no. 1, 2011, pp. 5–18. <https://doi.org/10.1080/00336297.2011.10483659>
- [4] Yli-Piipari, S., Physical Education Curriculum Reform in Finland. *Quest*, vol. 66, no. 4, 2014, pp. 468–484. DOI: <https://doi.org/10.1080/00336297.2014.948688>
- [5] Zhu, X., Ennis, C. D., & Chen, A., Implementation challenges for a constructivist physical education curriculum. *Physical Education & Sport Pedagogy*, vol. 16, no. 1, 2011, pp. 83–99. <https://doi.org/10.1080/17408981003712802>
- [6] Ciptadi, Z.D. Status Kebugaran Jasmani dan Keterampilan Bermain Sepakbola Siswa SSB

- Gama Usia 13–14 tahun. Skripsi. Yogyakarta: Universitas Negeri Yogyakarta, 2013.
- [7] Kusnanik, Nining W., and Hartati Hartati. "Physical and Physiological Profil Of Junior High Student In Indonesia." *Sports Science* vol. 10, no. 1, 2017, pp. 96-99.
- [8] McArdle W.D. et al.; *Essential of Exercise Physiology*, 2000.
- [9] Ismaryati. *Tes dan Pengukuran Olahraga*. Surakarta: UNS Press, 2006.
- [10] Suharto. *Strategi Pengembangan Pendidikan Jasmani Sebagai Upaya Untuk MeningkatkanKesegaran Jasmani Remaja*. Kumpulan Makalah Kepala Pusat Kesegaran Jasmani dan Rekreasi, 1-8, 1997a.
- [11] Setiaputri, K. A., Rahfiludin, M. Z., & Suroto, S. Hubungan Konsumsi Zat Gizi, Persentase Lemak Tubuh Dan Aktivitas Fisik Dengan Kebugaran Jasmani Pada Atlet Renang. *Jurnal Kesehatan Masyarakat (e-Journal)*, 5(3), 2017, pp. 166-174.
- [12] Gu, X., Chang, M., & Solmon, M. A. Physical activity, physical fitness, and health-related quality of life in school-aged children. *Journal of Teaching in Physical Education*, vol. 35, no. 2, 2016, pp. 117-126.
- [13] Vancampfort, D. et al., Changes in physical activity, physical fitness, self-perception and quality of life following a 6-month physical activity counseling and cognitive behavioral therapy program in outpatients with binge eating disorder. *Psychiatry Res.* 219, 2014, pp. 361–366, <https://doi.org/10.1016/j.psychres.2014.05.016>
- [14] Bullock, A. M., Mizzi, A. L., Kovacevic, A. & Heisz, J. J. The Association of Aging and Aerobic Fitness With. Memory. *Front. aging Neurosci.* 10, 63, 2018, <https://doi.org/10.3389/fnagi.2018.00063>
- [15] Chu, C. H., Chen, F. T., Pontifex, M. B., Sun, Y., & Chang, Y. K. Health-related physical fitness, academic achievement, and neuroelectric measures in children and adolescents. *International Journal of Sport and Exercise Psychology*, vol. 17, no. 2, 2019, pp. 117-132.
- [16] Lembar Rhamadhanie, j. u. n. j. u. n. g. Hubungan Tingkat Kebugaran Jasmani Dengan Hasil Belajar Akademik. *Jurnal Pendidikan Olahraga dan Kesehatan*, vol. 8, no. 1, 2020.
- [17] Dewi, U., Hubungan Kesegaran Jasmani Dengan Hasil Belajar Pendidikan Jasmani. *Jurnal Pendidikan Olahraga*, vol. 5, no. 2, 2017, pp. 175-183. DOI: <http://dx.doi.org/10.31571/jpo.v5i2.385>
- [18] Malta, A. K., *Hubungan Tingkat Kebugaran Jasmani dengan Hasil Belajar Penjasorkes Siswa Kelas VIII Sekolah Menengah Pertama Negeri 12 Padang* (Doctoral dissertation, Universitas Negeri Padang), 2018.
- [19] Mili, A., Hubungan Kebugaran Jasmani Dengan Hasil Belajar Penjasorkes Pada Siswa Kelas Viii Smp Negeri 13 Banda Aceh Tahun Pelajaran 2015/2016. *ETD Unsyiah*, 2016.
- [20] Zulraflia, Z., Turimin, T., & Muspita, M. Kontribusi Tingkat Kesegaran Jasmani dan Motivasi Belajar terhadap Hasil Belajar Penjas (Studi Korelasi pada Mahasiswa Penjas Angkatan 2013 FKIP UIR Pekanbaru). *Journal Sport Area*, 1(2), vol 1, no. 2, 2016, pp. 73-83. <https://dx.doi.org/10.25299/sportarea>
- [21] Sari, S. N. Hubungan Tingkat Kebugaran Jasmani dan Motivasi Belajar dengan Hasil Belajar Mata Pelajaran Penjas pada Kurikulum 2013. *Jurnal Sporta Sainatika*, 5(2), pp. 191-198. <https://doi.org/10.24036/sporta.v5i2.148>