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The physical fitness status of male students of Vietnam national university, Ho Chi Minh City

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Abstract

The article was made with the aim of fairly and comprehensively evaluating the physical fitness of male students at Vietnam National University, Ho Chi Minh City (VNUHCM). To provide accurate results for the study, the research team utilized popular research techniques in the fields of physical education and sports. Hence, the current fitness condition of VNUHCM students was assessed by comparing their performances with the average fitness of Vietnamese people and other universities such as Vietnam National University, Hanoi (VNU-HN), The University of Da Nang, Can Tho University, and students in Ho Chi Minh City who are at the same age and gender. In this way, the physical fitness of 19-year-old VNUHCM students was also measured in accordance with Decision 53/2008/BGD&DT of the Ministry of Education and Training. The findings showed that those with good fitness made up 29.33 percent of the total research objects, while those with acceptable fitness made up 24.81 percent, and those with poor fitness made up 55.81 percent. Overall, male students at VNUHCM appeared to be in better physical health than the average fitness of Vietnamese people, than the students of VNU-HN, The University of Da Nang, Can Tho University in terms of speed, leg muscle strength, endurance, and dexterity. They were also better than male students in Ho Chi Minh City in terms of endurance but not on an equal level of leg muscle strength and dexterity.

Keywords: The current condition, physical fitness, male students, Vietnam national university, Ho Chi Minh City

Introduction

Physical activity (PA) and a balanced diet have a major impact on human health. (Concha-Cisternas *et al.*, 2018) [2]. University students are the future labor force of the nation. They contribute to the industrialization, modernization and innovation of their country. It is essential in today's world for individuals to fully develop their minds, fitness, and spirits Le Van Lam (2001) [4]. According to Bergier *et al.* (2018) [1], for determining the health status of the future social elites of society, a thorough analysis of students' PA levels is essential. Evaluation of students' physical state is to the practice of physical education in training institutions. Both the theory and the school practice contribute to the effectiveness of the physical education program for university students. To promote their engagement and to ensure the training efficacy, tests and evaluations of students' PA levels during the teaching process must be done in line with the standard. A comprehensive assessment of youngsters' PA levels will assist the teaching staff to find out suitable solutions for the physical development of their students. Numerous students, according to some studies, do not adhere to the World Health Organization's PA recommendations (Juškelienė & Česnavičienė, 2017) [3]. Scientists employ a range of techniques such as questionnaire, physical fitness tests to get information on the PA levels of students. In the current study, the authors employed the standard tests proposed by Ministry of Education and Training (MOET) to evaluate the male students who are currently attending universities or institutions which are members of Vietnam National University, Ho Chi Minh City (VNUHCM). The purpose of this study is to discover and provide information about the current state of physical fitness of male students at VNUHCM. To be specific, the test items which are used to evaluate the students' PA levels are comprised of 30m sprint (s), Long jump (cm), 4x10m shuttle run (s), and 5-minute run (m).

Research samples

The sample of the current study includes 3229 male students at the age of 19 at the testing time-March 2022 who are studying at universities or institutions located in Ho Chi Minh City which belong to the Vietnam National University Ho Chi Minh City's system, including: 564 students from University of Science, 486 ones from University of Social Sciences and Humanities; 985 ones from University of Technology; 306 ones from University of Economics and Law; 355 ones from University of Information Technology; 412 ones from International University; 102 ones from Faculty of Medicine; 19 ones from Faculty of Politics - Administration. The involved students are assured to have normal health and

development without disabilities, and be free of diseases. They regularly participate in academic studying as well as physical education classes at the VNUHCM Sports Center.

2. Results and Discussions

2.1. Physical status of male students at VNUHCM

In order to assess the current physical fitness of the schoolboys at VNUHCM, the research team conducted a fitness test on 04 criteria based on the stand tests issued by the MOET (Decision No. 53/2008/BGDDT) [5], which are including 30m sprint (s), Long jump (cm), 4x10m shuttle run (s), 5-minute run (m). The results are presented in Table 1.

Table 1: Physical status of 19-year-old male students at VNUHCM (n = 3229)

No.	Parameter Item	\bar{X}	S	Cv	\mathcal{E}
1	30m sprint (s)	4.67	0.43	9.28	0.01
2	Long jump (cm)	227.77	19.32	8.48	0.01
3	4x10m shuttle run (s)	10.25	0.78	7.64	0.01
4	5-minute run (m)	983.42	126.70	12.88	0.01

The parameter that captures individual variation within the sample or population is called the coefficient of variation (CV). It was demonstrated that all of the study subjects' indicators had excellent homogeneity, or the dispersion of small fluctuations, among the research participants ($C_v < 10\%$), involving 30m sprint (s), long jump (cm), and 4x10m shuttle run (s). These are always indicators of high homogeneity since they are less impacted by environmental elements and daily situations like diet, living situations, work types, etc. At the same time, they were also measured by scales which has never had an absolute "zero". One indicator having average homogeneity among research individuals ($10\% < C_v < 20\%$) was a 5-minute run. Although there was some fluctuation within the sample set

and for a few quite big indices, all sample mean values were sufficiently representative ($\mathcal{E} < 0.05$) to allow for additional analysis and assessment.

2.2. Evaluation of the physical fitness of male students at VNUHCM according to Decision 53/2008/BGDDT [5].

The topic conducted an evaluation on each criterion and then the overall fitness of the research subjects according to Decision 53/2008/BGDDT. Four test items were long jumps (strength), 30 sprints (speed), 4x10m shuttle runs (dexterity), and 5-minute runs (endurance).

Table 2 was the results of the fitness tests on 19-year-old male students.

Table 2: Physical fitness assessment of 19-year-old male students at VNUHCM based on the Decision 53/2008/BGDDT (n = 3229)

		30m sprint (s)	Long jump (cm)	4x10m shuttle run (s)	5-minute run (m)	Students' physical strength
Standard	Good	< 4,70	> 225	< 11,75	> 1060	
	Acceptable	≤ 5,70	≥ 207	≤ 12,40	≥ 950	
Male students of VNUHCM	Good	1723 students 53.36%	1684 students 52.15%	3087 students 95.60%	837 students 25.92%	947 students 29.33%
	Acceptable	1461 students 45.25%	1074 students 33.26%	102 students 3.16%	1032 students 31.96%	801 students 24.81%
	Failed	45 students 1.39%	471 students 14.59%	40 students 1.24%	1360 students 42.12%	1481 students 45.87%

Based on the given standard and the obtained results in Table 2, it revealed that there were 947 students with good fitness, accounting for 29.33%; 801 ones with acceptable fitness, accounting for 24.81%, and 1481 students who failed to achieve the fitness standard, accounting for 55.81%. Among the criteria, endurance (5-minute run) had nearly 46% of students failed (1481 students), whereas the criterion of speed (30m sprint) had the highest rate of over 45% (1461 students). Regarding the good category, the criterion of dexterity (4x10m shuttle run) gained the highest rate which was over 95% (3078 students), while that of endurance (5-minute run) had the lowest rate of 25.92% (837 students). In short, it could be concluded that the 19-year-old male students at VNUHCM are poor in endurance, and leg muscle strength, however, they have advantages in dexterity and speed.

Figure 1 summarized the fitness test results of Table 2.

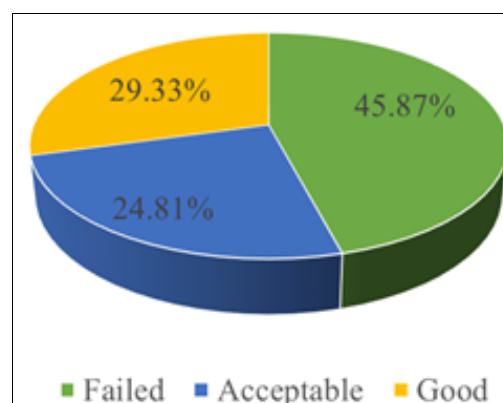


Fig 1: The physical fitness of 19-year-old male students at VNUHCM based on the standards of the Ministry of Education and Training

2.3. Comparison of the physical fitness between the male students at VNUHCM and the average Vietnamese fitness in 2001.

The assessment of the actual state of any phenomenon or thing must always be conducted on the basis of a common standard or of the same type. In this study, the researchers assessed the physical fitness status of the male students from VNUHCM schools by comparing their performances with the average fitness value of Vietnamese people of the same age and sex. The collected statistics involved the average fitness of Vietnamese people in 2001 ^[10] and that of students in Ho Chi Minh City (2010) ^[6], Can Tho University (2017) ^[7],

VNU-HN (2019) ^[8], University of Da Nang (2021) ^[9]. During the comparison, the t-test was applied and the relative difference was also calculated between the mean values by using the formula:

$$D = \frac{|\bar{X}_A - \bar{X}_B|}{\bar{X}_B} * 100$$

Table 3 presented the outcomes.

Table 3: Comparison of the average fitness values among the students of VNUHCM, Ho Chi Minh City and Vietnamese people

No.	Item	Students of VNUHCM		The average Vietnamese fitness		Students of Ho Chi Minh City		Sig ₁	Sig ₂
		\bar{X}	S	\bar{X}	D ₁	\bar{X}	D ₂		
1	30m sprint (s)	4.67	0.43	4.85	3.71	-	-	-	-
2	Long jump (cm)	227.77	19.32	218.00	4.48	227.70	0.03	.001	.134
3	4x10m shuttle run (s)	10.25	0.78	10.59	3.21	10.23	0.20	.001	.098
4	5-minute run (m)	983.42	126.70	954.00	3.08	918.40	7.08	.001	.001

The data in Table 3 showed that

The male students of VNUHCM had a 30m-sprint performance of 4.67 seconds, which was 0.18 seconds faster than that of a 19-year-old Vietnamese person, equivalent to 3.71%.

Male students at VNUHCM had a long jump record of 227.77 cm, which was not statistically different from students in Ho Chi Minh City by more than 0.07 cm, or 0.03% difference. Therefore, it could be said that 19-year-old undergraduates at VNUHCM had long jump skills comparable to those of students in Ho Chi Minh City and were 9.77 cm better than the typical Vietnamese individual (4.48% difference).

Male students from VNUHCM completed a 4x10m shuttle run in 10.25 seconds. The performance of 19-year-old

students in Ho Chi Minh City differed by 0.02 seconds, or 0.20%, whose difference was not statistically significant. As a result, it can be claimed that the dexterity of students at VNUHCM and Ho Chi Minh City was equivalent and 3.21 percent (0.34 seconds) better than the average Vietnamese fitness at the same age.

However, it was fascinating to note that male students from VNUHCM had set a record for the 5-minute run with 983.42 meters, which was better than both the average performance of 19-year-old Vietnamese people and students from Ho Chi Minh City who achieved 65.02 meters and 29.42 meters, respectively.

Figure 2 displayed the outcomes of the physical fitness comparison.

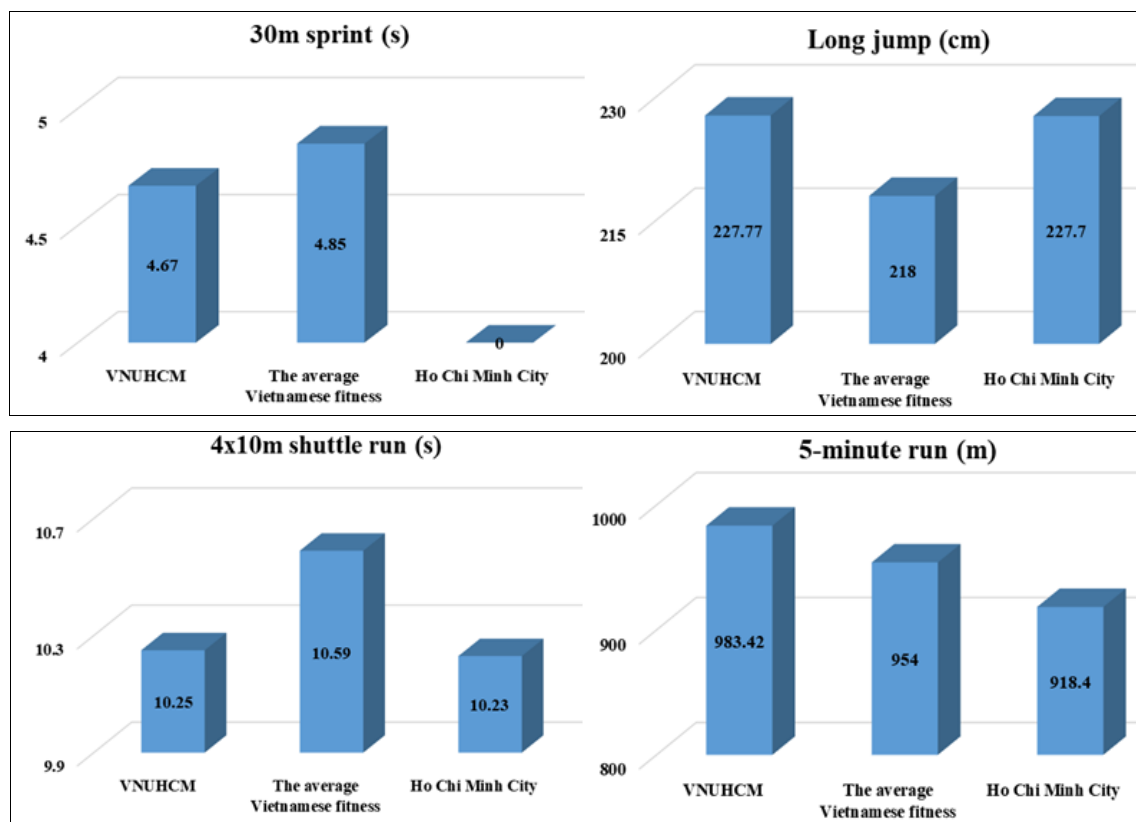


Fig 2: Comparison of the fitness test results among the students of VNUHCM's, Ho Chi Minh City's and the average Vietnamese fitness at the same age and gender.

Table 3 and Figure 2 both showed that the physical strength of VNUHCM male students was superior to the average 19-year-old Vietnamese man in terms of physical strength, leg muscle strength, endurance, and dexterity. They were also better than Ho Chi Minh City's students on endurance but

equivalent in leg muscle strength and dexterity.

The authors also made a comparison of the physical fitness of VNUHCM male students and that of VNU-HN, University of Da Nang, and Can Tho University students of the same age and gender. Table 4 presented the outcomes.

Table 4: Comparison of the average fitness values among the students of VNUHCM, VNU-HN, University of Da Nang, and Can Tho University

No.	Item	VNUHCM		VNU-HN		University of Da Nang		Can Tho University		Sig ₁	Sig ₂	Sig ₃
		\bar{X}	S	\bar{X}	D ₁	\bar{X}	D ₂	\bar{X}	D ₃			
1	30m sprint (s)	4.67	0.43	4.84	3.51	4.89	4.50	4.90	4.69	.001	.001	.001
2	Long jump (cm)	227.77	19.32	218.35	4.31	219.52	3.76	218.36	4.31	.001	.001	.001
3	4x10m shuttle run (s)	10.25	0.78	10.69	4.12	10.77	4.83	10.65	3.76	.001	.001	.001
4	5-minute run (m)	983.42	126.70	931.50	5.57	940.18	4.60	944.89	4.08	.001	.001	.001

Table 4 indicated that:

Male students of VNUHCM typically ran the 30 meters in 4.67 seconds, beating out that of VNU-HN by 0.17 seconds (3.51%), as well as the University of Da Nang by 0.22 seconds (4.50%), and Can Tho University by 0.23 seconds (4.69%).

Male students at VNUHCM consistently executed a long jump within 227.77 cm, outperforming those at VNU-HN by 9.42 cm (4.31%), the University of Da Nang by 8.25 cm (3.76%), and Can Tho University by 9.41 cm (4.31%).

Male students at VNUHCM established a record for the

4x10m shuttle run with a time of 10.25 seconds, surpassing VNU-HN students by 0.44 seconds (4.12%), University of Da Nang students by 0.52 seconds (4.83%), and Can Tho University students by 0.40 seconds (3.76%).

Male students at VNUHCM performed the 5-minute run with a reach of 983.42 meters, beating out their counterparts from VNU-HN by 51.92 meters (5.57%), the University of Da Nang by 43.24 meters (4.60%), and Can Tho University by 38.53 meters (4.08%).

Figure 3 illustrated the results of the physical fitness comparison.

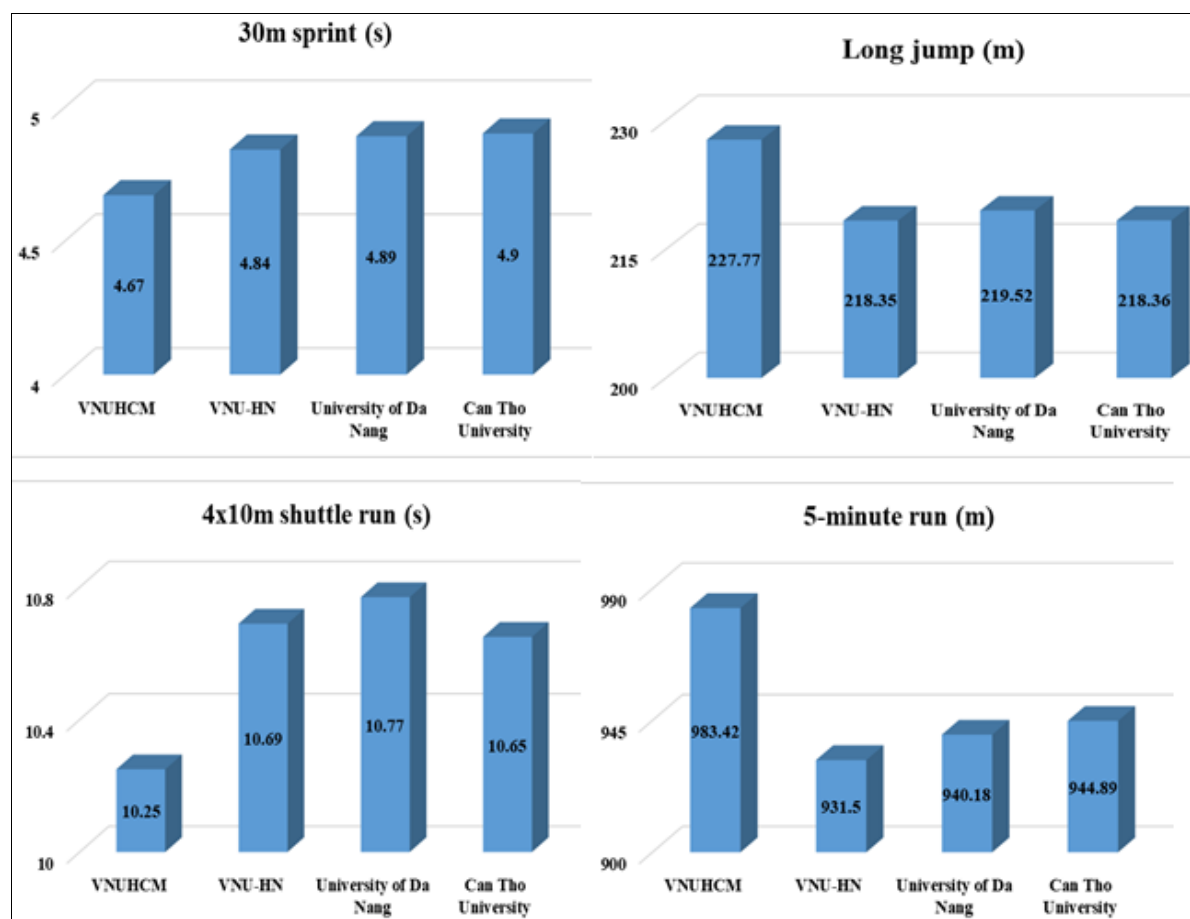


Fig 3: Comparison of the fitness test results among the students of VNUHCM, VNU-HN, University of Da Nang, and Can Tho University

The analysis which was presented in Table 4 and Figure 3, revealed that male students at VNUHCM had greater physical fitness than those at VNU-HN, the University of Da Nang, and Can Tho University, especially in terms of speed, leg muscle strength, endurance, and dexterity.

Conclusion

The fitness status of 19-year-old male students of VNUHCM, based on the standard of the MOET's physical level assessment are found as follows. Those with a good fitness state are accounted for 29.33%; those with an acceptable one accounted for 24.81%, and those who failed to satisfy the

standard accounted for 55.81%. The assessment results also showed that the 19-year-old VNUHCM students' PA levels were poor in endurance and leg muscle strength, but they performed tests in dexterity and speed well.

In terms of leg muscular strength, endurance, and dexterity, male students at VNUHCM were in better physical condition than the average Vietnamese students, and were also better than their counterparts at VNU-HN, University of Da Nang, and Can Tho University who were of the same age. Additionally, they had greater endurance than male students in Ho Chi Minh City, but fairly similar equivalent in leg muscle strength and dexterity.

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