



THE PHYSICAL FITNESS STATUS OF MALE STUDENTS OF DONG NAI UNIVERSITY, VIETNAM

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Abstract:

The article was made with the aim of evaluating the most fair and comprehensive way of physical fitness of male students at Dong Nai University. To bring about accurate results for the study, the team used research techniques common in the fields of physical education and sports. Therefore, the current fitness status of Dong Nai University students is assessed by comparing their performance with the average fitness of Vietnam and other universities such as Vietnam National University Ho Chi Minh City (VNUHCM) of the same age and sex. In this way, the fitness of 19-year-old students of Dong Nai University is also measured according to Decision 53/2008/BGD&DT of the Ministry of Education and Training. The results showed that people with good physical strength accounted for 2.49% of the total number of study subjects, people with acceptable fitness accounted for 7.47% and people with poor physical strength accounted for 90.04%. In general, male students from Dong Nai University have better physical fitness than the average Vietnamese, more than VNU-HCM students, and compared to Vietnamese in average physical strength and strength. hand and forearm muscles. They are also lower than the average fitness of the Vietnamese, lower than the students of VNU-HCM, and the average fitness of the Vietnamese in terms of speed, leg muscle strength, endurance, sub-muscular strength and dexterity.

Keywords: the current condition; physical fitness; male students; Dong Nai University

1. Introduction

Health is directly impacted by diet and physical activity [1,2,3,4,5,6]. Lack of physical exercise is regarded as a serious public health issue as it influences a great number of people around the world. Inactivity is a risk factor, along with smoking, obesity, and hypertension, according to the World Health Organization [7]. The leading causes of

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early mortality are chronic non-communicable illnesses, to which both children and young adults possess weakened immune systems, high anxiety, severe obesity, and movement disorders regarding limited exercise [8]. Economically stable countries, approximately 60–70% of which, do not even reach the standard amount of physical activity recommended by the World Health Organization for maintaining health and energy balance [9,10].

61% of pupils had poor endurance, while 28% exhibited below-average strength [11]. Kubiya et al. came to the conclusion that students, regardless of their amount of physical activity, had issues with their BMI and strength [12]. The same is true for poor cardiovascular and respiratory health, which is a significant predictor and can only be avoided by making some modifications in their lifestyles [13], involving increasing the amount of physical activity and adjusting their eating habits and diets [14]. According to several authors [16,17,18], one-third of high school students were not completely active after moving to college. Quan et al. [15] discovered a noticeable drop in the physical activity of applicants after they were enrolled in a university. Research on the physical activity habits of college students of American, Asian, African, and Hispanic descent has corroborated this. Multiple authors discovered that 46.7% of students were not physically active, and 16.7% of students were not physically active [19]. Various research has also revealed that sedentary behavior becomes a popular lifestyle among college students [20,21,22].

According to the United Nations Population Fund (UNFPA), by 2020, Vietnam will be one of the ten countries with the most inactive people in the world, with up to 30% of adults lacking physical activity; physical qualities, endurance, and strength of Vietnamese youth are ranked as poor in comparison to the standard. The country is also experiencing patient rejuvenation in a variety of chronic diseases; the number of overweight and obese children is on the rise, while the citizens' height is quite short [23]. As a result, increasing the amount of physical exercise for pupils is incredibly crucial. To find out feasible and effective approaches requires accurate information on students' current physical states. Hence, the authors attempt to carry on the research: 'The physical fitness status of male students of Dong Nai University, Vietnam'.

The purpose of this study is to discover and provide information about the current state of physical fitness of male students at Dong Nai University.

2. Methodology

Reference documents, interviews, observations, and statistics.

To be specific, the test items which are used to evaluate the students' PA levels are comprised of Handgrip Strength Test (strength of the hand and forearm muscles), Sit-up Test (abdominal strength), long jumps (explosive leg power), 30 sprints (speed), 4x10m shuttle runs (dexterity), and 5-minute runs (endurance).

2.1 Research samples

The sample of the current study includes 241 male students at the age of 19 at the testing time-March 2022 who are studying at Dong Nai University.

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 Dong Nai University.

2. Results and Discussions

2.1. Physical status of male students at Dong Nai University

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) [24], which are including Handgrip Strength Test (kg), Sit-up Test (times), long jumps (cm), 30 sprints (s), 4x10m shuttle runs (s), and 5-minute runs (m). The results are presented in Table 1.

Table 1: Physical status of 19-year-old male students at Dong Nai University (n = 241)

No.	Parameter Item	\bar{X}	S	Cv	\mathcal{E}
1	Handgrip Strength Test (kg)	56.26	18.44	32.78	0.04
2	Sit-up Test (times)	16.94	3.25	19.16	0.02
3	Long jump (cm)	190.66	26.98	14.15	0.02
4	30m sprint (s)	5.16	0.57	11.02	0.01
5	4x10m shuttle run (s)	11.56	0.84	7.28	0.01
6	5-minute run (m)	852.74	146.96	17.23	0.02

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 ($Cv < 10\%$), involving 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 that have never had an absolute "zero".

One indicator having average homogeneity among research individuals ($10\% < Cv < 20\%$) was a 5-minute run, 30m sprint (s), long jump (cm) and Sit-up Test (times).

One indicator having low homogeneity among research individuals ($Cv > 30\%$): Handgrip Strength Test (kg).

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 Dong Nai University according to Decision 53/2008/BGDDT

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 Dong Nai University based on the Decision 53/2008/BGDDT (n = 241)

		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 Dong Nai University	Good	45 students (18.67%)	18 students (7.47%)	150 students (62.24%)	18 students (7.47%)	6 students (2.49%)
	Acceptable	159 students (65.98%)	47 students (19.50%)	56 students (23.24%)	49 students (20.33%)	18 students (7.47%)
	Failed	37 students (15.35%)	176 students (13.03%)	35 students (14.52%)	174 students (72.20%)	217 students (90.04%)

Based on the given standard and the obtained results in Table 2, it revealed that there were 6 students with good fitness, accounting for 2.49%; 18 ones with acceptable fitness, accounting for 7.47%, and 217 students who failed to achieve the fitness standard, accounting for 90.04%. Among the criteria, endurance (5-minute run) had nearly 72% of students fail (174 students), whereas the criterion of dexterity (4x10m shuttle runs) had the highest rate of over 85% (216 students). Regarding the good category, the criterion of dexterity (4x10m shuttle run) gained the highest rate which was over 62% (150 students), while that of endurance (5-minute run) had the lowest rate of 7.47% (18 students). In short, it could be concluded that the 19-year-old male students at Dong Nai University 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.

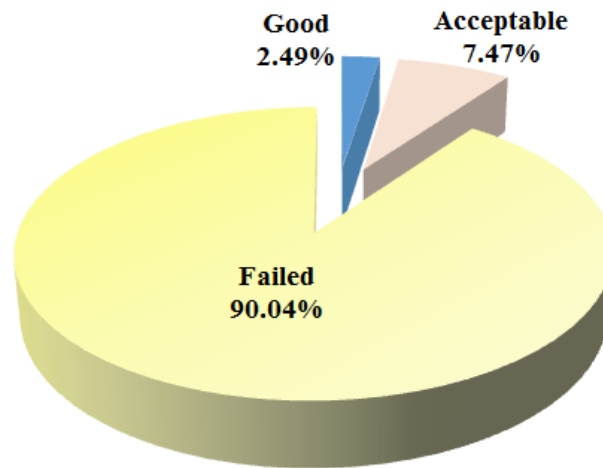


Figure 1: The physical fitness of 19-year-old male students at Dong Nai University based on the standards of the Ministry of Education and Training

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 [25] and that of students at Vietnam National University, Ho Chi Minh City (VNUHCM) (2016) [26]. 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 Dong Nai University, VNUHCM, and Vietnamese people

No.	Item	Dong Nai University		The average Vietnamese fitness		Students of VNUHCM		Sig ₁	Sig ₂
		\bar{X}	S	\bar{X}	D ₁	\bar{X}	D ₂		
1	Handgrip Strength Test (kg)	56.26	18.44	44.5	26.43	41.41	35.86	.000	.000
2	Sit-up Test (times)	16.94	3.25	20.0	15.30	20.59	17.73	.000	.000
3	Long jump (cm)	190.66	26.98	218	12.54	218.73	12.83	.000	.000
4	30m sprint (s)	5.16	0.57	4.85	6.39	5	3.20	.000	.000
5	4x10m shuttle run (s)	11.56	0.84	10.59	9.16	10.82	6.84	.000	.000
6	5-minute run (m)	852.74	146.96	954.00	-10.61	956.65	10.86	.000	.000

The data in Table 3 showed that:

The average performance of handgrip strength of Da Nang University male students is 56.26 kg, which is 11.76 kg greater than that of the typical Vietnamese at the age of nineteen (26.43%), and 11.76 kg higher than that of VNU-HCM students (35.86%).

The average number of sit-ups performed by male students at Da Nang University is 16.94 times, which is 3.06 times less than that of the typical Vietnamese at the age of nineteen (15.30%), and 3.65 times less than that of VNU-HCM students (17.73%).

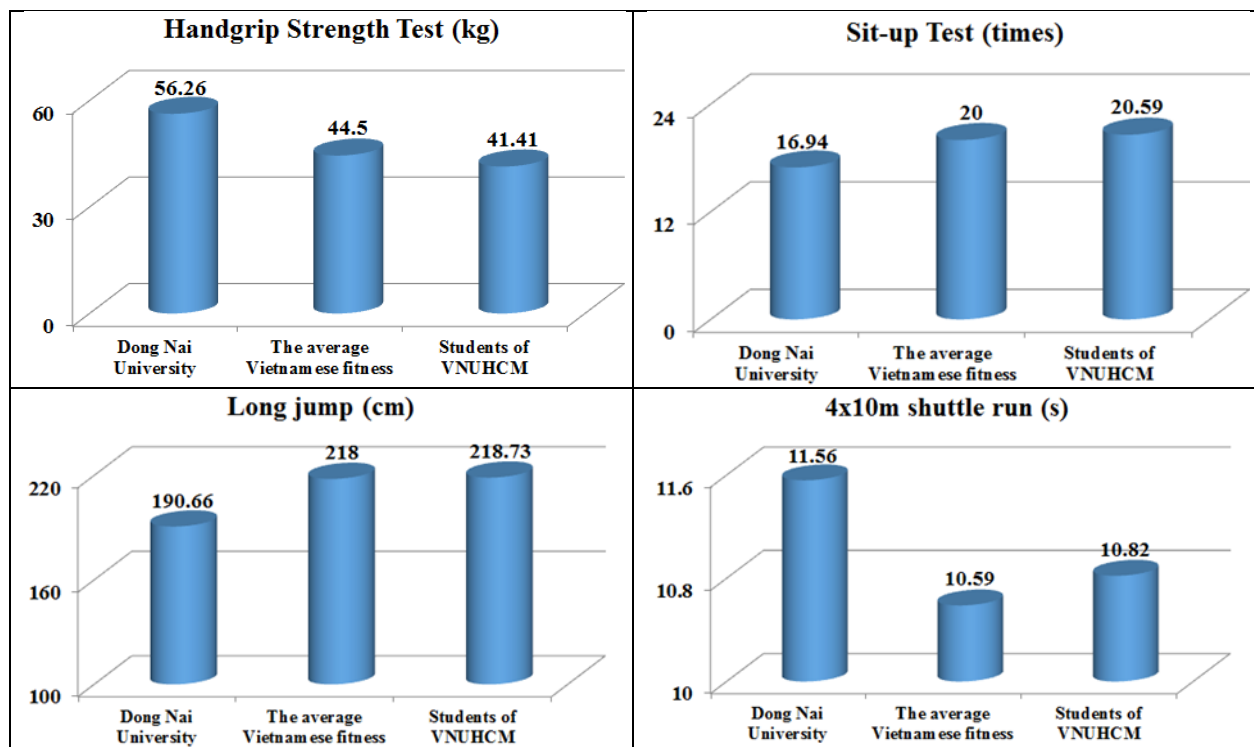
The average 30m-sprint performance of Da Nang University male students is 5.16 seconds, which is 0.31 seconds slower than that of the typical Vietnamese at the age of nineteen (6.39%), and 0.16 seconds slower than that of VNU-HCM students (3.20%).

The average long jump performance of Da Nang University male students is 190.66 cm, which is 27.34 cm shorter than that of the typical Vietnamese at the age of nineteen (12.54%), and 28.07 cm shorter than that of VNU-HCM students (12.83%).

The average performance of 4x10m shuttle run of Da Nang University male students is 11.56 seconds, which is 0.97 seconds lower than that of the typical Vietnamese at the age of nineteen (9.16%), and 0.74 seconds worse than that of VNU-HCM students (6.84%).

The average performance of 5-minute run of Da Nang University male students is 852.74m, which is 101.26m lower than that of the typical Vietnamese at the age of nineteen (10.61%), and 103.91m worse than that of VNU-HCM students (10.86%).

Figure 2 displayed the outcomes of the physical fitness comparison.



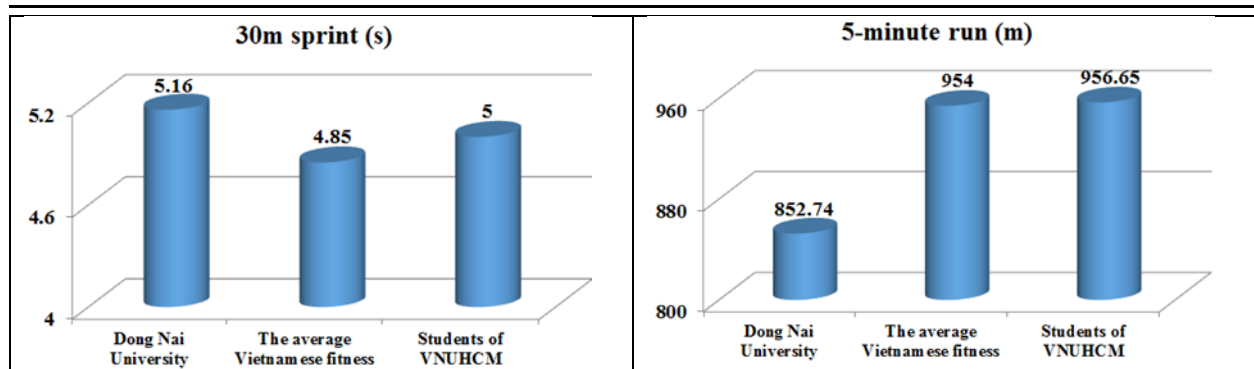


Figure 2: Comparison of the fitness test results among the students of Dong Nai University, VNUHCM, and the average Vietnamese fitness at the same age and gender

Table 3 and Figure 2 both showed that the physical strength of Dong Nai University male students was superior to the average 19-year-old Vietnamese man in terms of strength of the hand and forearm muscles and they were also lower than in terms of speed, leg muscle strength, endurance, abdominal strength and dexterity.

3. Conclusion

The fitness status of 19-year-old male students of Dong Nai University, based on the standard of the MOET's physical level assessment is found as follows. Those with a good fitness state accounted for 2.49%; those with an acceptable one accounted for 7.47%, and those who failed to satisfy the standard accounted for 90.04%. The assessment results also showed that the 19-year-old Dong Nai University students' PA levels were poor in endurance, dexterity, speed, abdominal strength, and leg muscle strength, but they performed tests on the strength of the hand and forearm muscles well.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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