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## A physical fitness survey of grade 6 (11-year-old) students at secondary schools in Bac Lieu Province, Vietnam

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### Abstract

The paper aims at clarifying the physical status of students in grade 6 (11 years old) at secondary schools in Bac Lieu city, Bac Lieu province, Vietnam. Through the synthesis and comparison of the mean scores of physical indicators of 11-year-old students at Bac Lieu city's secondary schools with the criteria to assess physical fitness of Vietnamese students of the same age, from which assessing physical fitness 11-year-old students at Bac Lieu city secondary schools according to Decision 53/2008/QD-BGD&DT of the Ministry of Education and Training.

**Keywords:** status, physical fitness, students, secondary schools, Bac Lieu city

### 1. Introduction

Physical education in schools is an important and indispensable part of general education. It contributes to training new people for perfect development, effectively serving the construction and defense of their nation. The purpose of physical education of Vietnam is to train the young generation to become fully developed people, with abundant health, good physical fitness, great courage and resilience in inheritance the revolution of Vietnam Communist Party and have a healthy and joyful life. Therefore, physical development for students in schools at all levels is an important and strategic action. In order to improve the physical fitness of students, accurately assessing the physical development of students is an important and practical issue. However, this issue in fact in Bac Lieu city has not received adequate attention. Thus, this study was conducted to assess the physical development status of students in grades 6 aged 11 at secondary schools in Bac Lieu city, Bac Lieu province from which physical development solutions for secondary school students in the province would be proposed.

### 2. Research design and method

Research instruments used in this study were reference materials, pedagogical testing methods, medical examination and statistics analysis.

The subjects were 549 11-year-old students including 266 females and 283 males from several lower secondary schools in Bac Lieu city, Vietnam.

### 3. Results

#### 3.1 Physical status of students in grade 6 (11 years old) at secondary schools in Bac Lieu city

The paper was conducted to assess the actual physical condition of 6th graders (11 years old) at secondary schools in Bac Lieu city. The tests used in this paper were adapted from Duong Nghiep Chi et al. (2003) [2]. Height (cm), weight (kg), flexibility (body bending) (cm), sit-ups (times/30 seconds), hand's force (kg), 30m running standing long jump (cm), 4x10m shuttle run (second) and 5 minute run (m) were selected.

To assess the physical status of 6th graders (11 years old) at secondary schools in Bac Lieu city, the researchers chose the above tests to assess the physical fitness of the research subjects and calculated the statistical parameters of the criteria. The results of the tests are presented in table 1.

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**Table 1:** Results of physical fitness assessment indicators of secondary school students aged 11 in Bac Lieu

Tests	male students in grade 6 (n= 283)				female students in grade 6 (n= 266)			
	$\bar{X}$	S	Cv%	E	$\bar{X}$	S	Cv%	E
Height (cm)	145.64	7.31	5.02	0.05	144.15	9.78	6.79	0.07
Weight (kg)	43.75	7.07	16.17	0.17	40.72	6.92	17.00	0.18
Bending the body (cm)	6.97	4.01	57.52	0.60	6.41	2.52	39.22	0.41
30m run(s)	6.47	6.47	1.70	0.28	6.60	0.98	14.84	0.16
Standing long jump (cm)	165.52	21.16	12.78	0.13	157.67	27.13	17.21	0.18
Sit-ups (times/30s)	14.34	6.16	12.78	0.45	10.09	4.36	43.22	0.45
Hand's force(kg)	20.5	3.99	42.99	0.20	20.81	3.04	14.62	0.15
4x10m shuttle run (s)	11.95	1.46	12.25	0.13	12.17	1.05	8.62	0.09
5-minute run (m)	824.53	135.70	16.46	0.17	778.2	104.97	13.49	0.14

The data from table 1 show that the coefficient of variation (CV), a parameter reflecting the variability among individuals of the population. All the physical assessment indicators show that:

Indicators with high homogeneity (it means low dispersion) among the study population (CV < 10%) are height, 4x10 shuttle run (female students).

Indicators with average homogeneity (10% < CV ≤ 20%) are weight, standing long jump, sit-ups (male students), hand's force (female students), 5-minute run (female students).

Indicators with low homogeneity (20 < CV < 30%): 30m run(s)

Indicators with very low homogeneity (CV > 30%): bending the body, sit-ups (female students), 5-minute run (male students)

The body flexibility itself has always a big difference among

the individual because it depends on the biological characteristics of each individual. Besides, the body flexibility index is measured by the "interval scale", without "zero", so the variation between the individuals is getting bigger and bigger.

Although the variability among individuals in the sample population in some indicators are quite high, all the sample mean values are representative enough ( $\epsilon < 0.05$ ) to be able to base on that to make the next assessment and analysis.

In order to have a general and specific view of the physical health condition of the research subjects, this study compares and contrasts with the physical condition of Vietnamese people<sup>[2]</sup> of the same age and sex. In this paper, one sample t-test was applied. The descriptive data are shown in Table 2 below.

**Table 2:** Results of average comparison of physical fitness assessment of grade 6 students with assessment standards of physical fitness Vietnamese aged 11.

Test	Male students grade 6 in Bac Lieu city		physical fitness assessment criteria for Vietnamese males aged 11	d	t	p	Female students grade 6 in Bac Lieu city		Physical fitness assessment criteria for Vietnamese females aged 11	d	t	p
	n= 283						n= 266					
	$\bar{X}$	S	$\bar{X}$		$\bar{X}$	S	$\bar{X}$					
Height (cm)	145.64	7.31	137.59	8.05	18.53	<0.001	144.15	9.78	139.44	4.71	7.85	<0.001
Weight (kg)	43.75	7.07	30.03	13.72	32.65	<0.001	40.72	6.92	30.41	10.31	24.30	<0.001
Bending the body (cm)	6.97	4.01	6.00	0.97	4.07	<0.001	6.41	2.52	6.00	0.41	2.65	<0.05
Running 30m (s)	6.47	6.47	5.69	0.78	7.72	<0.001	6.60	0.98	6.18	0.42	6.99	<0.001
Long jump (cm)	165.52	21.16	161.00	4.52	3.59	<0.001	157.67	27.13	150.00	7.67	4.61	<0.001
Lie and reach (times/30s)	14.34	6.16	16.00	-1.66	4.53	<0.001	10.09	4.36	13.00	-2.91	10.89	<0.001
Hand's force(kg)	20.5	3.99	19.37	1.13	4.76	<0.001	20.81	3.03	18.78	2.03	10.93	<0.001
Shuttle run 4x10m (s)	11.95	1.46	11.61	0.34	3.92	<0.001	12.17	1.05	12.44	-0.27	4.19	<0.001
5-minute run (m)	902.72	135.70	880.00	22.72	0.49	>0.05	778.20	104.97	788.00	-9.8	1.52	>0.05

Df = n-1, t05 = 1.964, t001 = 3.34

The data in Table 2 show:

In terms of body composition: The mean scores of height (cm) and weight (kg) of grade 6 students in Bac Lieu city were better than the standard evaluation criteria of 11-year-old Vietnamese students, 8.05 cm, 13.72 kg (male students) and 4.71 cm respectively, 10.31kg (female students) because t calculated > t001 = 3.34 at the threshold P<0.001.

Regarding physical fitness: The physical fitness indicators of 6th grade students in Bac Lieu are as follow:

For male students: mean values of tests standing long jump (cm), running 30m (s), flexibility (cm), hand's force (kg), shuttle run (s) were found higher than the standard assessment criteria for Vietnamese 11 years old and were 4.52 cm, 0.78 s, 0.79 cm, 1.13 kg, 0.34s, respectively, because t-calculated > t001 = 3.34, at the threshold P < 0.001. However, the mean

score of "lie and reach" (times/30s), 5-minute run (m) of grade 6 students in Bac Lieu were 1.66 times/30s, 55.47 m which were lower than the standard physical 11-year-old Vietnamese students, with t-calculated > t001=3.34 at threshold P < 0.001.

For female students: mean values of flexibility (cm), running 30m (s), long jumping (cm), hand's force (kg) were recorded higher than those of Vietnamese standards for 11-year-old students and were 0.41cm, 0.42s, 7.67cm, 2.03kg respectively because t-calculated > t05 = 1.964, t-calculated > t001 = 3.34, at threshold P<0.05, P<0.001. In contrast, the mean scores of sit-ups (times/30s), 4x10m shuttle running (s), 5 minute running (m) of 6th graders in Bac Lieu city were found lower than the assessment standards for Vietnamese 11-year-old students and were 2.91 times/30s, 0.27s, 9.8m respectively

because  $t_{\text{calculated}} > t_{001} = 3.34$  at the threshold  $P > 0.05$  and  $P < 0.001$ .

### 3.2 Assessment of physical fitness of 11-year-old students at Bac Lieu City Secondary Schools according to Decision 53/2008/BGD&DT.

According to Decision 53/2008/QD-BGDĐT [1] issued by the Ministry of Education and Training on September 18, 2008 of on the assessment and grading of physical fitness, students are classified in three levels which are good, satisfactory and insufficient. After testing, the results of the assessment on grade 6 students in Bac Lieu city are presented in Table 3.

The paper chose 4 criteria to assess the physical fitness of students:

- Mandatory criteria: long jump (cm) and 5 minute run (m).
- Elective criteria: 30m run (second) and 4x10m shuttle run (second).

Table 3 presents the results of physical fitness of 6th graders (11 years old) at secondary schools in Bac Lieu city according to each criterion.

#### Long jump (cm)

There were 109 male students accounting for 38.52%, and 136 female students accounting for 51.13% were ranked good. There were 98 male students, accounting for 34.63%, and 57 female students, accounting for 21.43%, who were ranked

satisfactory.

76 male students in grade 6, accounting for 26.86%, and 73 female students, accounting for 27.44% were ranked insufficient.

#### 30m run (seconds)

There were 98 male students, accounting for 34.63%, 142 female students, accounting for 53.38% for girls were ranked good. Meanwhile 101 male students, accounting for 35.69%, 70 female students, accounting for 26.32% were satisfactory. Insufficient grading has 84 male students, accounting for 29.68%, and 53 female students, accounting for 20.30%.

#### 4x10m Shuttle run (seconds)

201 male students, accounting for 71.02%, and 229 female students, accounting for 86.09%. There were 36 school boys, accounting for 12.72%, there were 24 schoolgirls, accounting for 9.02% were in satisfactory level. Unsatisfactory level had 46 male students, accounting for 16.25%, only 13 girls, accounting for 4.89%.

#### 5 minute run (m)

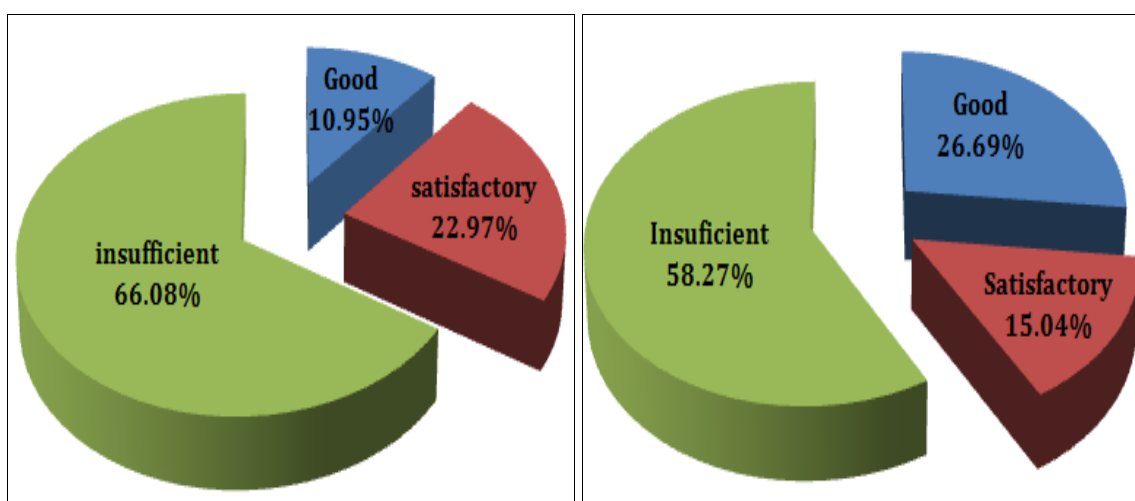
- There were 60 male students, accounting for 21.20 and 114 female students, accounting for 42.86% were ranked good. 125 male students, accounting for 106% and 106 female students, accounting for 39.85% were satisfactory. Insufficient level had 98 male students, accounting for 34.63% and 46 female students accounting for 17.29%.

Table 3: Percentage data.

Gender	Level	Long jump		30m run		Shuttle run		5minute run		Overall fitness	
		SL	%	SL	%	SL	%	SL	%	SL	%
Male students n=283	Good	109	38.52	98	34.63	201	71.02	60	21.20	31	10.95
	Satisfactory	98	34.63	101	35.69	36	12.72	125	44.17	65	22.97
	Insuficient	76	26.86	84	29.68	46	16.25	98	34.63	187	66.08
Female students n=266	Good	136	51.13	142	53.38	229	86.09	114	42.86	71	26.69
	Satisfactory	57	21.43	70	26.32	24	9.02	106	39.85	40	15.04
	Insuficient	73	27.44	54	20.30	13	4.89	46	17.29	155	58.27

The overall fitness of grade 6 students in Bac Lieu city can be summarized in Figure 1 below, in which good level had 31 male students (10.95%) and 71 female students (26.29 %),

satisfactory level had 65 male students (22.97%) and 106 female students (39.85%). (Figure 1).



Fitness of male students

Fitness of Female students

Chart 1: Overall fitness of grade 6 students at secondary schools in Bac Lieu city

The results in table 3 and chart 1 show that over 17.29% of female students and 66.08% of male students in grade 6 (11 years old) at secondary schools in Bac Lieu city have insufficient physical strength according to Decision 53/2008/QĐ-BGDĐT of Ministry of Education and Training. Through analysis of each evaluation criterion of male and female students in grade 6, it was found that in 3 criteria of high jump, 30m run, shuttle run, the number of students who got good level and satisfactory was at very high percentage; and the criterion of 5-minute run, the percentage of good and satisfactory level accounts for a low percentage, leading to the fitness rating not meeting the evaluation standards of the Ministry of Education and Training.

Endurance is a difficult physical quality to practice, to have good endurance one must practice regularly and each training session lasts long time. From the above data, it can be inferred those students are afraid of practicing endurance, so the achievement of 5-minute run test of 6th graders (11 years old) at secondary schools in Bac Lieu city has not met the physical standards of the Ministry of Education and Training.

#### 4. Conclusion

- The physical status of 6th graders (11 years old) at secondary schools in Bac Lieu city is better than the assessment standard for Vietnamese people of the same age in terms of body composition and physical strength (equivalent to speed and dexterity, less than aerobic fitness).
- Results of the physical fitness classification of grade 6 students (11 years old) at secondary schools in Bac Lieu city according to Decision 53/2008/QĐ-BGDĐT of Ministry of Education and Training can be summarized as follow:
  - + For female students: 26.69% good, 39.85% satisfactory, 17.29% insufficient.
  - + For male students: 10.95% good level, 22.97% satisfactory, 66.08% insufficient.

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