



ISSN Print: 2664-7281
ISSN Online: 2664-729X
Impact Factor: RJIF 8
IJSEPE 2024; 6(2): 199-201
www.sportsjournals.net
Received: 28-07-2024
Accepted: 03-09-2024

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Correlation between daily physical activity and physical fitness level of first-year female students of the faculty of literature, university of education: Thai Nguyen University

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DOI: <https://doi.org/10.33545/26647281.2024.v6.i2c.127>

Abstract

Through the International Physical Activity Questionnaire (IPAQ), the study clearly noted that the lack of physical activity (PA) and sedentary behaviour (SB) in students were strongly related to physical health and psychological health for first-year students of the Faculty of Literature of Thai Nguyen University of Education. The study developed an interview panel consisting of questions about 3 specific types of activity (Strong Activity, Moderate Activity, and Low Activity) in 1 week with 4 types of activities commonly seen in students: study time, leisure, distance traveled, and static time. At the same time, the study evaluated the correlation between the indicators of activity daily physical activity and physical fitness indicators of female students through the determination of the correlation (r) between the daily physical fitness index of students (through the types of physical activities) and the contents of the assessment and ranking of students' physical fitness according to Regulation No. 53/2008 of the Ministry of Education & Training.

Keywords: Physical activity, students, faculty of literature, Thai Nguyen University of education

Introduction

Physical activity (PA) is defined as any spontaneous movement of the body, produced by skeletal muscles and requires the use of energy, PA includes all activities such as exercise and other activities that accompany daily activities, with any intensity, regardless of the time of day or night. The subject's PA is said to meet the WHO recommendation when the total number of PA ≥ 600 MET-min/week. According to the WHO, the level of PA is "low" when the individual's PA is less than 600 MET-min/week, the PA level is "moderate" when the Occupancy is between 600 and 3000 MET-min/week, and "strong" when the individual's PA is at least 3000 MET-min/week) [3, 6].

Based on practical basis, daily physical activity is necessary, but in fact, many students only participate in lecture hall sessions and activities that the school has set out according to the plan and learning sessions on the subject of education. After classes, most students spend a lot of free time, using phones and computers for entertainment, playing games, surfing the web...

Especially for freshman, new students, studying and living in a new environment, many students are still confused, have not caught up with the learning environment, living environment far from home, family, etc and they are still afraid to participate in collective activities as well as individual advocacy activities. leading to increased sedentary time, which risks affecting students' physical health as well as quality of life, especially for first-year female students. The results of the study are important in considering the completion of appropriate education plans, and at the same time proposing measures to improve the physical health and quality of life among students today.

Research Methods: Research using routine and reliable scientific research methods for Physical Education, including: Methods of analyzing and synthesizing documents; Interview and seminar methods; Pedagogical observation methods; Pedagogical examination methods; Statistical mathematical methods.

Research Results and Discussion

1. The current situation of the physical fitness level of first-year female students of the Faculty of Literature of the University of Education - Thai Nguyen University.

According to the regulations on assessment and grading of students' physical fitness of students of the Ministry of Education and Training(MOEAT), issued under Decision No. 53/2008/MOEAT, dated 18/9/2008 [1]. The project examined the following contents to assess the physical

fitness level of first-year female students of the Faculty of Literature: Subjects: 67 females.

Specific inspection contents:

- + 30s sit-up (times)
- + Standing long jump (cm)
- + 30m sprint (s)
- + 4 x 10m shuttle run (s)
- + 5-min running field (m)

The results are shown in Table 1

Table 1: Results of physical fitness test of first-year female students of the Faculty of Literature (n=67 females)

Stt	Contents of the test	Result (M±SD)	Good		Standard		Fail	
			n	%	n	%	n	%
1	30s sit-up (times)	18.5±2.01	18	26.86	35	52.24	14	20.89
2	Standing long jump (cm)	161.5±15.60	14	20.89	41	61.19	12	17.91
3	30m sprint (s)	5.98±1.02	28	41.79	31	46.27	8	11.94
4	4 x 10m shuttle run (s)	12.76±0.34	23	34.32	29	43.28	15	22.39
5	5-min running field (m)	913±62.41	11	16.42	38	56.72	18	26.87

Table 1 shows that the physical fitness level of first-year female students in the Faculty of Literature is mainly below standard. Some contents have a relatively high rate of failure such as 5-minute (m) self-paced running (26.87%), 4 x 10m shuttle running (second) is 22.39% and sit up (times/30 seconds) is 20.89%. Thus, it can be seen that the physical fitness level of first-year female students of the Faculty of Literature is at an average level. However, there are still some students who have not really paid attention to their physical fitness and health level as well as have not realized the importance and have not taken the time to exercise, so there are still some students have a low level of physical fitness.

2. The current situation of daily activity of first-year female students of the Faculty of Literature of the University of Education - Thai Nguyen University

2.1 Characteristics of the study object

The study conducted an investigation, combined with interviews with 67 first-year female students of the Faculty of Literature, in terms of age, height, weight, and current accommodation. Results obtained in table 2.

Table 2: Characteristics of the study subjects (n=67)

BTI	Factors	Average	±SD
1	Age (years)	18,5	0.6
2	Height (cm)	154.9	6.1
3	Weight (kg)	46.6	10.3
4	BMI (kg/m2)	22.4	3.8

Table 2 shows that the average age of students is 18,5 years old. The average height is 154.9 cm; Weight 46.6 kg; average BMI of 22.4 with a standard deviation of 3.8 kg. In addition, the interview results show that all of these students have the same study schedule for the 2nd semester of 2023-2024. 74.3% of students are in the university's dormitory, and 15% are in off-campus dormitories, and 10.7% are at home with their families.

2.2 Physical activity level of first-year female students of the Faculty of Literature of Thai Nguyen University of Education

To evaluate the physical activity index of first-year female students of the Faculty of Literature of the University of Science and Technology, the research conducted interviews

with 67 students through questionnaires (short-form interview forms according to WHO standards with adjustments). The Interview Table consists of questions about 3 specific types of physical activity (Strong PA, Moderate PA, and Low PA) in 1 week with 4 common types of activities: study, leisure, distance traveled, and spare time. (sleeping, watching TV, phone..) [4, 5]

Physical activity is divided into three levels: light, moderate, and heavy (strong). The researchers measured the intensity of physical activity according to MET (short for metabolic equivalent of task). The interview results are shown in Table 3

Table 3: Number of Contracts (MET-minutes/week) and Ratio of Subjects reaching over 600 MET-min/week

TT	Types of physical activity	Female (n = 67) (M±SD)
1	Study	512.6±173.4
2	Movement	285.2±439.1
3	Entertainment	457.8±245.5
4	Static	508.4±243.9
Rate ≥ 600 MET-min/week (n/%)		52/77.6

The results of Table 3 show that: The number of PA for learning is 512.6±173.4 MET-min/ week; movement is 285.2±439.1 MET-min/week. The number of PA for entertainment is 457.8±245.5 MET-min/week; static is: 508.4±243.9 MET-min/ week. 77.6% of students effectuated PA at a level of ≥ 600 MET-minutes/week according to WHO recommendations.

In order to see the degree of division of students' physical activity rate in 1 week, the study summarized the results of the PA as follows:

Table 4: Results of student's PA level division

PA Level	Female (n=67)	
	Amount	Rate (%)
Strong	13	19.4
Average	39	58.2
Low	15	22.4

The results of Table 4 show: the strong level: 19.4%, the average level: 58.2% and the low level: 22.4%. Thus, out of a total of 67 female students of the Faculty of Literature of TNUE, there are 52/67 students with moderate and high physical activity level (over 600 MET-min/week)

accounting for 77.6%, 22/67 students with a low level of physical activity below 600 MET-min/week, accounting for 22.4%.

3. Correlation between daily physical activity index and physical fitness index of female students.

In order to evaluate the correlation between the physical activity indices of first-year female students of the Faculty

of Literature in Thai Nguyen University of Education, the study was conducted to determine the correlation (r) between the daily physical activities index of students (through the types of physical activities) and the contents of the assessment and ranking of students' physical fitness according to Regulation No. 53/2008 of the Ministry of Education & Training^[1]. The results are presented in table 5

Table 5: Correlation between students' daily council indicators and students' physical fitness rating assessment contents.

TT	Contents of the test	Strong physical activity		Medium physical activity		Low physical activity	
		r	d	r	d	r	d
1	30s sit-up (times)	0.925	85,6	0.726	58,1	0.511	26,1
2	Standing long jump (cm)	0.881	77,6	0.669	44,8	0.593	35,2
3	30m sprint (s)	0.902	81,4	0.689	47,5	-0.512	26,2
4	4 x 10m shuttle run (s)	0.886	78,5	0.731	50,8	-0.501	25,1
5	5-min running field (m)	0.834	69,5	0.627	39,3	0.496	24,6

Note: d is the Determinant Index, which determines how the relationship is with each other^[7].

Table 5 shows that daily physical activity and fitness level have a positive correlation. This means that when daily physical activity increases, physical fitness level also tends to increase. The correlation between physical activity indicators and physical fitness assessments decreased as the level of physical activity decreased (low physical activity level), strong physical activity had a very high correlation with all physical fitness test contents, indicating that students with strong daily physical activity had better physical fitness.

Conclusion

The results of the study showed that the current level of physical fitness and daily physical activity of first-year female students of the Faculty of Literature of the University of Education - Thai Nguyen University were mainly at medium and low levels. The daily physical activity process of students is currently in line with the psychophysiological characteristics of the age group, but it is still limited compared to the World Health Organization's recommendation for minimum daily physical activity. The results of the study are determined to be the basis for making adjustments to the training program, as well as the basis for recommendations in improving the quality of life, increasing the amount of exercise, improving health, and preventing the germs of diseases for students.

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