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**APPLICATION OF EXERCISES TO IMPROVE GENERAL FITNESS FOR  
STUDENTS OF DA NANG UNIVERSITY OF MEDICAL TECHNOLOGY AND  
PHARMACY**



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**ABSTRACT**

The main objective of the study was to know the application of Exercises to improve General Fitness for students of Da Nang University of Medical Technology and Pharmacy of Vietnam. The application of exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy has been a matter of concern. Using regular research method, we have selected certain topics and applied 15 exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy, contributing to improving the quality of physical education speaking general.

**Keywords:** Exercises, General Physical Fitness, Students & Da Nang University.

**INTRODUCTION**

Danang University of Medical Technology and Pharmacy and Physical Education division have built a course with the aim at enhancing quality of Physical Education subjects and contributing to students' fitness development. However, general fitness of students over the last years is still limited. Results from an examination shows that more than 60% of students did not achieve fitness requirements stipulated by the Viet Nam Ministry of Education and Training namely speed (30m), strength (hand grip) and endurance (5' free run). It is meaningful and important to enhance their general fitness in order to meet the increasing social demands. Based on the above-mentioned practical bases and arguments as well as basis of analyzing the significance and importance of the issues, we decided to conduct the research entitled: "Application of exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy"

**OBJECTIVE**

The main objective of the study was to know the application of Exercises to improve General Fitness for students of Da Nang University of Medical Technology and Pharmacy of Vietnam.

## RESEARCH METHOD

In this study, a number of different research methods have been employed namely synthesizing and analyzing; interview; pedagogical examination; pedagogical experiment and statistical mathematics.

## FINDINGS AND DISCUSSION

Selecting exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy Based on synthesizing theoretical and practical literature on training general fitness for students of Danang University of Medical Technology and Pharmacy, 24 exercises are selected. Then, an in-depth interview (with prepared questions) was conducted with 15 teachers and experts in order to choose the best exercises for general fitness improvement. The results are shown in Table I below:

**Table No: I**

**Interview results of selecting exercises for students' general fitness improvement of Danang University of Medical Technology and Pharmacy (n=15)**

No.	Type of exercise	Interview Result	
		No. of respondents	Percentage
1	30m sprint with a 1-1'30"-minute break each time, 3-5 times in total	15	100
2	60m sprint with a 1-1'30"-minute break each time, 3-5 times in total	14	93
3	Accelerating in the first 50m and slowing down in next 50m; a 1'-1'30"-minute break each time; 3-5 times in total	12	80
4	8x50m relay race with a 1-1'30"-minute break each time, 2-3 times in total	11	73
5	5-second high-knee exercise, then fast run 5-6 steps immediately when listening to signal; a 1-minute break each time; 5 times in total	5	33
6	100m sprint with a 2-2'30"-minute break each time, 2-3 times in total	13	86
7	Doing a plank, 3 sets and 15 times each set; a 2-minute break between 2 sets	13	86
8	Jumping and touching the ball in the sandpit; 3 sets and 20 times per set; a 2-minute break between 2 sets	15	100
9	Pull-up, 3 sets and 15 times per set; a 2-2'30"-minute break between 2 sets	14	93
10	50m run with low knee; a 2'30"-3-minute break each time; 3 times in total	6	40
11	Jumping and changing legs continuously on a 30-cm obstacle; 3 sets and 20 times per set; a 1-1'30"-minute break between 2 sets	12	80

12	20m leapfrogging with a 3-minute break each time, 3 times in total	14	93
13	Frog bend; 3 sets and 15 times per set; a 2-minute break between 2 sets	13	86
14	Lifting weights; 3 sets and 15 times per set; a 2-minute break between 2 sets	11	73
15	400m run with a 2-3-minute break each time, 3 times in total	11	73
16	800m run with a 2-3-minute break each time, 3 times in total	7	46
17	1500m run with 5-7-minute break between 2 times	13	86
18	3000m run with a 7-10-minute break between 2 times	14	93
19	5-minute free running with a 5-7-minute break between 2 times	13	86
20	Shuttle runs with a 2-minute break each time, 3 times in total	15	100
21	20m ziczac running through 5 poles with a 2-minute break each time, 3 times in total.	9	60
22	20m ziczac relay race with a 2-minute break each time, 3 times in total.	11	73
23	Hurdling, Push up in 15 times, 20m sprint	8	53
24	Ball sports	14	93

Based on the selection and interview results, the study has chosen 15 exercises which are 80% or above for experiment. Applying and determining effectiveness of exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy. The study uses pedagogical experimental method. The students in both control and experimental groups are given 30 periods/semester, 01 lesson/week/2 periods with duration of 110 minutes, including 2 tests and 2 theoretical periods. During practical lessons, the control group still learns the prescribed program while the experimental ones allowed applying the selected exercises in the last 15 minutes of the lesson, after completing the learning content. The general fitness of the 2 groups before and after the experiments presented in Table II.

**Table No: II**

**Comparison of results of general fitness indicators of male students of Danang University of Medical Technology and Pharmacy**

No.	Indicators	Time (before and after experiment)	Control group (n = 30)	Experimental group (n = 30)	tt	P
1	30m-dash (s)	Before	5.08 ± 0.33	5.05 ± 0.32	0.380	> 0.05
		After	4.61 ± 0.12	4.41 ± 0.15	2.890	< 0.05
		W%	9.71	13.53		
2	High jump (cm)	Before	218.63 ± 1.16	219.08 ± 1.01	0.310	> 0.05
		After	229.81 ± 1.02	230.90 ± 1.03	2.913	< 0.001
		W%	4.98	5.25		

3	Grip strength of preferred hand (kg)	Before	42.61 ± 4.86	43.48 ± 3.77	1.319	> 0.05
		After	45.93 ± 3.85	46.98 ± 3.74	2.084	< 0.05
		W%	7.49	7.73		
4	30-second frog bend (times)	Before	14.15 ± 3.76	14.12 ± 3.95	0.030	> 0.05
		After	18.04 ± 4.45	21.56 ± 2.35	2.550	< 0.001
		W%	24.17	41.70		
5	5-minute free running (m)	Before	914.07 ± 54.90	913.45 ± 53.80	0.063	> 0.05
		After	994.82 ± 53.95	1030.89 ± 53.35	3.605	< 0.001
		W%	8.46	12.08		
6	4 x 10m Shuttle run(s)	Before	13.42 ± 0.23	13.32 ± 0.27	0.380	> 0.05
		After	12.34 ± 0.24	12.04 ± 0.31	4.112	< 0.05
		W%	8.38	10.09		
Total (W%)			63.19	90.38		

After experiment, the results between the II groups show significant differences in all tests showing ( $t > t_b = 2.042$ ) with probability ranging from  $p < 0.05$  to  $p < 0.001$ . In other words, the exercises applied to improve general fitness in the study have shown better effects compared to the existing exercises being used at the university. Table 2 also indicates the increase of physical indicators of the 2 groups, especially in the experimental one. Comparing the total development rhythm of W%, it can be seen that the total development rhythm of the experimental set is 90.38%, 27.19% higher than that of the control set which is only 63.19% ( $p < 0.05$  to  $p < 0.001$ ). This proves that the use of selected exercises is relatively effective for the development of physical qualities for the male students of Danang University of Medical Technology and Pharmacy, improving the results of some sports. To clarify the effectiveness of the selected exercises, the academic result of Physical Education in the academic year 2017-2018 for students of both experimental and control groups is assessed and presented in Table III.

**Table No: III**

**Academic results of Physical Education in academic year 2017-2018 of male students of Danang University of Medical Technology and Pharmacy in both experimental and control groups**

Category	Distinction		Good		Fair		Fail	
	Number	%	Number	%	Number	%	Number	%
Control (n = 30)	3	10	9	30	17	56.7	1	3.3
Experimental (n = 30)	7	23.3	15	50	8	26.7	0	0

Results from Table III show that performance in Physical Education classes in the experimental group is relatively higher than the control one (the experimental group has a total of 73,3 % of good and distinction students, 33% higher than that of the control

group which only accounts for 40%). This again reveals that the exercises applied to improve general fitness in the study have shown better effects compared to the existing exercises being used at the university.

### CONCLUSION

Employing methods of synthesizing and analyzing, interview and other research methods, the study has developed and selected a system of 15 exercises to improve general fitness for students of Danang University of Medical Technology and Pharmacy. After the 4-month experimental period, along with application of selected 15 exercises, the result shows that the level of students' general fitness of Danang University of Medical Technology and Pharmacy has been improved remarkably. Specifically, total development rhythm of the experimental group has increased strikingly compared to that of the control group in the 6 tests (The Viet Nam Ministry of Education and Training's set of criteria for evaluating and classifying students issued in 2008 was 27.19%, with p ranging from 0.05-0.001)

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